



UNSW
SYDNEY



UNSW MEDICINE & HEALTH

MFAC1522: Beginnings, Growth and Development B

Student Guide, TP2 2024

Table of Contents

TABLE OF CONTENTS	III
WELCOME.....	1
COURSE THEMES.....	1
AIMS OF THE COURSE.....	1
COURSE OVERVIEW	1
TIMETABLE	1
RESOURCES	1
EVALUATION.....	2
2023 FEEDBACK AND 2024 COURSE CHANGES.....	2
ATTENDANCE REQUIREMENTS	3
STAFF INVOLVED IN THE COURSE	4
 STUDENT SUPPORT AND WELLBEING	6
SCENARIO 1 - CATHERINE: HEALTHY BABIES	9
SCHEDULE	9
OVERVIEW	11
SGS 1 - INTRODUCTION AND OVERVIEW OF THE FIRST FOUR YEARS OF LIFE	12
SGS 2 – NUTRITION THROUGH THE AGES	15
SGS 3 - GROWTH IN CHILDHOOD	25
SGS 4 – LANGUAGE, LEARNING AND COGNITIVE DEVELOPMENT OF CHILDREN.....	44
SCENARIO 2: ALEX AND WILLIAM: CHILDHOOD DEVELOPMENT.....	51
SCHEDULE	51
OVERVIEW	53
SGS 5 - NORMAL MOTOR DEVELOPMENT OF CHILDREN.....	55
SGS 6 - INTRODUCTION TO PSYCHOSOCIAL ASPECTS OF INTELLECTUAL DISABILITY.....	63
SGS 7 - IMPROVING THE HEALTH OF ABORIGINAL AND TORRES STRAIT ISLANDER CHILDREN, WITH A FOCUS ON OTITIS MEDIA ...	70
SGS 8 - ENDOCRINE SYSTEM.....	84
SGS 9 - EXPLORING SEXUAL DEVELOPMENT	90
SCENARIO 3: TEENAGE MENTAL HEALTH	97
SCHEDULE	97
OVERVIEW	98
SGS 10 - CHILD HEALTH GROUP PROJECT PRESENTATIONS.....	101
SGS 11 - LIFE'S UPS AND DOWNS	105
SGS 12 - FACTORS AFFECTING MENTAL HEALTH.....	112
SGS 13 - ACCESSIBILITY TO HEALTH CARE FOR TEENAGERS – WHERE DO I GO?	119
ASSESSMENT.....	123
ASSESSMENT OVERVIEW.....	123
ACADEMIC HONESTY AND PLAGIARISM	123
USE OF AI FOR ASSIGNMENTS AND PROJECTS.....	123
PHASE 1 AI DECLARATION	124
ASSIGNMENTS AND PROJECTS OFFERED IN BGD B 2024	124
ASSIGNMENT 1: ETHICAL CONSIDERATIONS OF ENABLING EQUITABLE USE OF CFTR MODULATORS IN CHILDREN WITH CYSTIC FIBROSIS.....	127
ASSIGNMENT 2: ADOLESCENT HEALTH CARE EXPERIENCE	130
ASSIGNMENT 3: DIET, THE GASTROINTESTINAL MICROBIOME AND DISEASE: HOW ARE THEY LINKED?	132
ASSIGNMENT 4: GROWTH WITHOUT GROWTH HORMONE	135
BGDB GROUP PROJECT 2024	137

Welcome

Welcome to Beginnings, Growth and Development B.

We acknowledge the Bidjigal, Birpai and Wiradjuri people who are the Traditional Owners and Custodians of the unceded lands on which this course will be delivered at the Kensington, Port Macquarie and Wagga Wagga campuses, and we pay our respects to Elders past, present, and emerging.

The Beginnings, Growth and Development courses in Phase One have been designed to help you gain an understanding of the particular health issues that arise during conception, pregnancy, childhood and adolescence, building upon learning from previous courses.

In BGDB there are three scenarios:

- Catherine – Healthy Babies
- Alex & William – Childhood Development
- Teenage Mental Health

These scenarios explore the issues of growth and development in an extended family group. It provides a context to explore issues such as: nutrition and failure to thrive in a baby; hearing and otitis media; intellectual disability; and teenage mental health and well-being. Students will study the structure and function of the gastrointestinal and the endocrine systems, and the ear with a focus on the conditions that affect babies and young children. They will consider the many issues involved in teen stresses including mental health and depression. Relevant aspects of public health, including clinical epidemiology, community resources and accessibility of health care will be explored.

Course themes

The four themes for the Beginnings, Growth and Development domain are:

- Conception, pregnancy and birth
- **Childhood growth and development**
- **Nutrition, growth and body image**
- **Puberty, adolescence, sexuality and relationships**

The BGD-B course emphasises the last three of these themes.

Aims of the course

The three scenarios focus on a range of issues. They aim to stimulate students' interest in:

- Nutrition and growth in babies and children including the underlying structures and processes
- Normal development and behaviour in babies and children to five years
- Common childhood infections and the related medical sciences
- Puberty, and the issues faced by adolescents at this stage of their lives
- The interaction between stress, personality and mental health in teenagers.

Course overview

Further details on each activity, including detailed capability references, suggested readings and websites, and information on relevant disciplines, are contained in the eMed Map at <http://emed.med.unsw.edu.au>.

Timetable

Consult the eMed Timetable for the details of session dates, times and locations.

Resources

Resources relevant to the course can be accessed on the eMed Map and on the Beginnings, Growth and Development B Moodle.

Evaluation

Student feedback on the course and teaching is gathered from the UNSW myExperience survey along with student focus groups, student forums, and at times additional evaluation and improvement instruments developed in consultation with the Faculty of Medicine's Program Evaluation and Improvement Group. Student feedback is taken seriously, and continual improvements are made to the course based in part on such feedback.

Significant changes to the course will be communicated to subsequent cohorts of students taking the course through inclusion of information in student course guides, in Moodle, and in presentations by course convenors. Evaluation activities across the Faculty are strongly linked to improvements and ensuring support for learning and teaching activities for both students and staff.

The myExperience evaluation for this course will run each year. If you have any additional feedback for this course, please provide this via your facilitator, the element convenors, or the course convenor.

2023 Feedback and 2024 Course Changes

We appreciate student feedback because we are always looking for ways to improve your learning experience in this course. Key points from the 2023 myExperience survey (179 respondents of 286 enrolments; 63%) and our response for the delivery of this year's course are provided below.

Previous students told us that:

- They enjoyed the well-structured course, the interesting content and the passionate lecturers.
- They appreciated the in-person lectures and the flexibility offered by pre-recorded and online lectures, recorded practicals.
- They appreciated the online learning modules that provided opportunities to review content (e.g., scenario quizzes, practicals, online tutorials, physiology online modules) and activities that allowed learning at own pace.
- Overall, they enjoyed the SG sessions and case studies.
- 95% of respondents agreed that the course contained an appropriate breadth and depth of learning materials to challenge them; 93.9% of respondents were satisfied with the overall quality of the course.

Students suggested the most challenging elements of studying were:

- Staying motivated and feeling connected, especially in rural schools.
- Learning QMP.
- Learning embryology, and anatomy, histology practicals.

We have responded to this feedback as follows:

- The embryology and anatomy practicals, and Scenario group sessions will be delivered in a face-to-face format for students on campus in Sydney, Port Macquarie, and Wagga Wagga. Providing face-to-face sessions will assist with social connections and motivation. Histology practical sessions will remain online.
- The embryology lectures have been revised and more clinically-oriented material has been added.
- The embryology practical material will now be more focused and efficient, covering the content discussed in the lectures.
- The BGDB Group Project for QMP has been improved based on the feedback. The choice of articles specifically addresses child health issues, which are more relevant to the theme of the course. Additionally, students demonstrated a preference for certain methodologies, likely due to familiarity, so fewer article choices are provided, concentrating on these methods. The learning outcomes and guide has been updated for clarity.

Content delivery in 2024

- All three plenary lectures will be delivered face-to-face incorporating hybrid mode via Echo to provide an opportunity to bring everyone together at the start of each scenario, and an opportunity for any questions you may have. There will also be some lectures immediately preceding or following the plenary lectures, which will be delivered face-to-face.

- There are also several lectures with guest speakers (Intellectual disability, with Dr Seeta Durvasula; Teenage Mental Health, with Alex Wilde) which will be delivered face-to-face (hybrid) with the opportunity to engage and ask questions of the speaker.
- The remainder of the lectures will be a mix of new pre-recorded lectures and interactive lectures delivered online via Teams.
- Other activities, such as practicals, tutorials, and clinical skills, will be delivered in a variety of means, including live sessions, interactive online activities, pre-recorded videos, and quizzes.

Attendance Requirements

You are expected to attend **all** classes and it is to your advantage to do so. Studies have shown that high attendance correlates with better engagement and success in courses and disciplines. By attending, engaging and actively participating in your classes you not only increase your own opportunities for success, but you also help build a learning community with other students. Attendance is a student's responsibility, and attendance and engagement are important aspects of professionalism. Please see the university policy on Class Attendance. <https://student.unsw.edu.au/attendance>

UNSW Medicine expects students to attend **all** scheduled activities (including those online) and be punctual. It is important that you contact your course convenor or the Phase 1 convenors if you need to allow for illness or misadventure. If you fail to comply with the attendance and engagement requirements for a course or term, you may be awarded an Unsatisfactory Fail (even if you pass the end of course examination).

If you have a potentially infectious illness, it is important to stay home. If you will miss your scenario group session, you should inform your facilitator that you will be absent. Please copy that email to medphase1@unsw.edu.au. Please also inform the relevant teachers for any other small group sessions you will miss (e.g. clinical skills, ethics tutorials). If you will miss a practical class, it is not necessary to inform the principal teacher unless you want to discuss whether you can attend an alternative session on another day (if this is possible). It is your responsibility to ensure that you catch up on any material that you missed. If you are going to be away from campus for a prolonged period (more than 3 days) you will need to present a medical certificate and inform your Course Convenor.

If you are unable to complete an assessment or exam on time because you are incapacitated due to illness or other causes you will also need to complete a Special Consideration application. Information about the Special Consideration application process and the online application form can be found on the [Special Consideration website](#). Once you have submitted your application you should hear back within 3 days but usually within less time. Please also see the Student Wellbeing Tab at the top of the page for further assistance.

Where a significant absence is anticipated during course time (such as conference attendance or important cultural or personal commitments) it is imperative that the student contact the Phase 1 Convenors as soon as possible so that leave of absence can be considered and alternative arrangements for study/assessment put into place. Failure to provide sufficient notice may result in an Unsatisfactory Fail grade for the course.

If a student is absent from any learning activity, it is their responsibility to independently learn the material they missed. If a student fails a course, they cannot use absences from learning activities, for any reason, as grounds for appeal.

Facilitators and tutors will keep attendance records in all scenario group sessions, campus clinical skills sessions, hospital sessions, ethics tutorials and practical classes. Student attendance at hospital teaching sessions is particularly important. Poor attendance is flagged by shared systems across all clinical campuses and Faculty. Failure to attend without an acceptable reason will result in a comment regarding a lapse in professional behaviour being added to the student's Portfolio. More than one such Professionalism comment in eMed may lead to a recommendation that the student is not eligible to sit the Phase 1 Clinical Skills examination.

It is important that students are aware of and comply with NSW Health (ClinConnect) compliance requirements, as discussed in the Program Guide.

It is your responsibility to frequently check the timetable for assigned classes and for any changes. Ignorance of classes, which are scheduled in the timetable, is not an acceptable excuse for non-attendance.

You can attend only classes to which you are allocated. You **may not attend** hospital sessions, practicals or other classes at different times or locations to those in your timetable. Staff may ask you to leave if you are not in the correct class.

Students taking **Self-Care Days** must register online using eMed portfolio at least 24 h ahead. Please ensure that you follow the guidelines on the Medicine Program website <https://medprogram.med.unsw.edu.au/getting-started-0#SelfCare>. Note that this includes notifying relevant teachers/facilitators of any small group classes that you will be missing eg scenario groups, ethics tutorials, clinical skills and hospital sessions, **at least 24 hours ahead**.

Special Consideration

UNSW operates under a Fit to Sit/ Submit rule for all assessments. If a student wishes to submit an application for special consideration for an exam or assessment, the application must be submitted **prior to the** start of the exam or before an assessment is submitted. If a student sits the exam/ submits an assignment, they are declaring themselves well enough to do so.

UNSW has introduced a process which allows a student to apply for a **short extension (SE)** without providing any documentation or reason. This process has been introduced to improve the student experience, reduce stress and allow for an extension in a timely manner when unexpected events occur. For the written individual assignment (either set assignment or negotiated assignment) students can apply for a two-day SE for submission. The SE has to be applied for before the original assignment submission date and is automatically approved. If a student applies for SE and then realises they need to apply for special consideration, they can do so.

You can apply by accessing the Short Extension Student Portal on the [Special Consideration login](#) page.

Staff involved in the course

Course convenors

Dr Vita Birzniece, School of Biomedical Sciences

Dr Kalli Spencer, Office of Medical Education

Mr Patrick Chau, School of Biomedical Sciences

Preferred communication with course convenors is by email: bgdb@unsw.edu.au

Beginnings, Growth and Development B Design Group

- Dr Sandra Chuang (School of Women's and Children's Health)
- Dr Steven Leach (School of Women's and Children's Health)
- Dr Sophie Pitt (Office of Medical Education)
- A/Prof Lu Liu (School of Biomedical Sciences)
- Dr Jordana McLoone (School of Clinical Medicine)
- Dr Carrie Davenport (Rural Clinical School - Port Macquarie)
- Dr Jennifer Cohen (School of Clinical Medicine)
- Dr Reza Shirazi (School of Biomedical Sciences)
- Dr Amir Ariff (Office of Medical Education)
- Dr Catherine McHugh (School of Psychiatry)

With special thanks to:

- Professor Gary Velan, Dr Narelle Mackay and the Phase 1 exam review committee
- Dr Karen Gibson (Phase 1 Convenor) and Dr Martin Le Nedelec (Phase 1 Co-convenor)
- Ms Louise Metcalfe, Ms Kerrie Arnhold, Mr Altaf Syed (Office of Medical Education)

- Ms Elena Mankovskaia and MESO for their ongoing support of all aspects of the development and delivery of this course.
- The many other individuals, including teachers, health professionals, patients and administrative staff who have contributed.

Other contacts

Ethics Element Convenor

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Quality of medical practice Convenor

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Clinical skills Convenor

Dr Silas Taylor

Email: silas.taylor@unsw.edu.au

Clinical skills Co-convenor (Phase 1)

Dr Kalli Spencer

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Student support

UNSW Medicine Student Wellbeing Advisor:

<https://www.unsw.edu.au/medicine-health/study-with-us/student-life-resources/wellbeing>

UNSW Counselling Service: <https://www.counselling.unsw.edu.au/>

Student Services	Teaching Support
https://nucleus.unsw.edu.au/en/contact-us https://portal.insight.unsw.edu.au/web-forms/ eCOE Enrolment enquiries and help Recognition of Prior learning Program Leave/Discontinuation Internal Program Transfer Review of Results Standard letters (Jury Duty, Enrolment confirmation etc)	BMed.PM@unsw.edu.au Assignments Learning Plans/miniCEXs Exams – clinical and non-clinical Exam adjustments Special Consideration Results (eMED/myUNSW) Special Study Plans eMED questions

Medicine Program Teaching Support

Elena Mankovskaia	MedTimetable@unsw.edu.au	Timetable Manager
Learning Resources Help	BMed.LR@unsw.edu.au	eMed Map, Moodle
Cara Elvidge	02 5524 1532	Admin/Student Support (Port Macquarie)
Rochelle McPherson	02 9065 4833	Admin/Student Support (Wagga Wagga)

Student Support and Wellbeing

Student Support - I Need Help With...

<p>My Feelings and Mental Health Feeling depressed, overwhelmed or not your usual self?</p>	 <p>Mental Health Connect student.unsw.edu.au/mhc</p>	 <p>UNSW (24/7) Mental Health Support: +61(2) 9385 5418 0485 826 595</p>
<p>Uni and Life in Australia Stress, financial, visas, Accommodation & More</p>	 <p>TalkCampus student.unsw.edu.au/Talkcampus</p>	 <p>Offshore Call 24-hour Medibank Hotline: +61 2 8905 0307</p>
<p>Reporting Sexual Assault/Harassment</p>	 <p>Student Support Indigenous Student Support M&H Student Experience Officer, Indigenous</p>	 <p>student.unsw.edu.au/advisors_nura-qlli-centre-indigenous-programs Frances Pestana</p>
<p>Educational Adjustments To manage my studies and disability / health condition</p>	 <p>Equity Diversity & Inclusion (EDI)</p>	 <p>student.unsw.edu.au/els</p>
<p>Academic and Study Skills</p>	 <p>Academic Skills</p>	 <p>student.unsw.edu.au/skills</p>
<p>Special Consideration Because life impacts our studies and exams</p>	 <p>Special Consideration</p>	 <p>student.unsw.edu.au/special-consideration</p>
<p>Physical Health Doctors visits, Vaccinations</p>	 <p>Health Service</p>	 <p>student.unsw.edu.au/hsu OR Bulk Billed GP</p>

External Mental Health Support

Lifeline

24/ crisis support and suicide prevention services

13 11 14

Lifeline.org.au

Mental Health Line

24/7 professional help and advice
Referrals to local mental health services

1800 011 511

1800RESPECT

24/7 support for people impacted by sexual assault, domestic violence and abuse.

1800 737 732

1800respect.org.au

Beyond Blue

24/7 mental health support service

1300 224 636

beyondblue.org.au

headspace

Online support and counselling for young people aged 12 to 25

1800 650 890

(9am-1am daily)

Headspace.org.au/eheadspace
(webchat)

Mensline

24/7 counselling service for men

1300 78 99 78

Mensline.org.au

Qlife

LGBTIQ+ peer support and referral

1800 184 527

(6pm-10pm daily)

Qlife.org.au
(online chat 3pm-12 am daily)

13YARN

24/7 support service for Aboriginal and Torres Strait Islander people

13 92 76

13yarn.org.au

Online Mental Health Resources

Useful resources to support mental health literacy and peer support

Mind Hub

Links to curated resources
for students

This Way Up

iCBT (internet delivered
Cognitive Behavioural
Therapy) courses for a range
of anxiety, depressive and
related mental health
conditions

Black Dog

Evidence based mental health
resources and support
services

Your Room

Evidence based information
about alcohol and other drugs

TalkCampus

University specific peer-to-
peer support platform.
Available in 26 different
languages

Reach Out

Anonymous online platform
that enables young people to
connect and learn together

GambleAware

Information and support for
problem gambling

Butterfly Foundation

Information and support for
disordered eating

Scenario 1: Healthy Babies

Scenario 1 - Catherine: Healthy babies

Schedule

Refer to the eMed Timetable system and email updates sent to your UNSW email account for accurate times and locations.

Learning Activity	Teacher
Scenario Plenary 1: Catherine - Healthy Babies	Zaininger, Paula
Lecture 1: Oral cavity and pharynx anatomy	Shirazi, Reza
Lecture 2: Normal childhood development	Perkins, Deborah
Scenario Group Session 1: Introduction and overview of the first four years of life	Spencer, Kalli
Campus Clinical Skills Session 1: The Paediatric History and 3-way interviews, the ENT examination	Spencer, Kalli
Lecture 3: Upper GIT anatomy	Berry, Rachel
Lecture 4: GIT development	Mohammadiroushandeh, Amaneh
Lecture 5: Enzyme catalysis	Le Bard, Rebecca
Science Practical 1: Embryology of the Gastro-intestinal Tract	Mohammadiroushandeh, Amaneh
Lecture 6: Exocrine glands of the upper GIT	El-Haddad, Joyce
Lecture 7: Upper GIT histology	El-Haddad, Joyce
Lecture 8: Group Project: Advanced research analysis	Ariff, Amir
Science Practical 2: Anatomy of the Oral Cavity and Pharynx	Shirazi, Reza
Online Activity: Post prac revision: Anatomy of the Oral Cavity and Pharynx	Shirazi, Reza
Science Practical 3: Enzymes	Le Bard, Rebecca
Online Activity: Post prac revision: Enzymes	Le Bard, Rebecca
Lecture 9: Lactation	Gibson, Karen
Lecture 10: Growth in childhood	Birzniec, Vita
Science Practical 4: Group Project: Interpreting Journal Articles	Ariff, Amir
Scenario Group Session 2: Nutrition through the ages	Spencer, Kalli
Science Practical 5: Upper Gastrointestinal Tract Histology	El-Haddad, Joyce
Online Activity: Post prac revision: Upper gastrointestinal tract histology	El-Haddad, Joyce
Hospital Clinical Skills Session 1: Introduction to Women's hospital	Susic, Daniella
Lecture 11: Cognitive development	McLoone, Jordana
Lecture 12: Intersex/DSD and Narrative ethics	Langendyk, Vicki

Note: This schedule is continued on the following page.

Learning Activity	Teacher
Lecture 13: Ear anatomy and function	Byun, Christina
Lecture 14: Microbiology of URTI and otitis media in children	Lan, Ruiting
Science Practical 6: Anatomy of the Foregut and Midgut	Berry, Rachel
Online Activity: Post prac revision: Anatomy of the oesophagus, stomach and small intestine	Shirazi, Reza
Scenario Group Session 3: Growth in childhood	Spencer, Kalli
Lecture 15: Emotional and Social Development	Numbers, Katya
Lecture 16: Facial development	Mohammadiroushandeh, Amaneh
Lecture 17: Physiology of digestion and absorption	Kovacevic, Zaklina
Science Practical 7: Microbiology of URTI and otitis media in children	Lan, Ruiting
Online Activity: Post prac revision: Microbiology of the upper respiratory tract	Lan, Ruiting
Online Q&A and Content Recap Session 1	Birzniece, Vita Spencer, Kalli Chau, Patrick
Scenario Group Session 4: Language learning and cognitive development of children	Spencer, Kalli

Note: This schedule is subject to change. It only shows the first instance of any one activity. Refer to the eMed Timetable system and email updates sent to your UNSW email account for accurate times and locations.

Overview

Aims:

To develop understanding of:

- Nutrition and growth in the first 5 years;
- Gastrointestinal (GI) tract function;
- Normal cognitive and language development;
- The ear and hearing.

Key concepts:

- Normal growth and developmental milestones;
- GI tract development, structure and functions;
- Nutritional requirements for normal growth and the converse: growth problems;
- Families and parenting, access to healthcare for young families;
- Ear anatomy and physiology, audiometry and hearing loss.

Alex is brought to the general practitioner for review of an ear infection. His mother (Angela) has also brought his 3-month-old sister Catherine along. Angela says that she vomits a lot, is very unsettled, and is a poor feeder. She did initially try to breast feed her, but now has changed to bottle-feeding. However, Catherine has failed to gain weight adequately. She does not sleep well, and Angela is up most of the night trying to settle her.

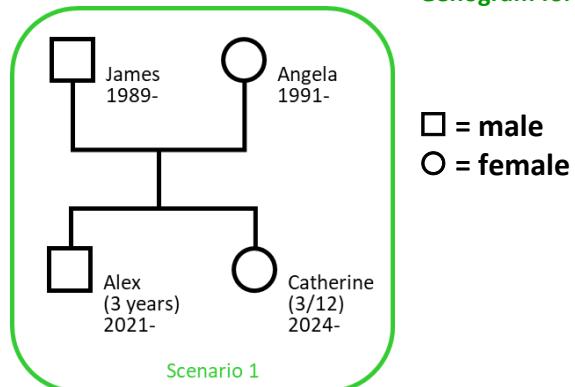
Catherine has had a runny nose with difficulty breathing and a cough for the past 3 days. Her feeding has been even more problematic. She has had frequent runny stools. Further history reveals normal developmental milestones, including smiling at 9 weeks of age, and reaching out for objects.

On examination Catherine is an alert baby who makes good eye contact and smiles reactively. Her weight is well below expected and she has little subcutaneous fat. Her nose is crusty and blocked. She has a moist cough and wheeze on listening to the chest, and some mild increased work of breathing. The remainder of her examination is normal.

Her brother, Alex, is 3 years old and is currently well but had a short admission to hospital for pneumonia at two years of age and has asthma for which he is on a preventer medication. His immunisations are up to date. Alex was a very fussy eater after weaning, only eating plain rice or pasta and refusing to eat any vegetables or red meat resulting in a diagnosis of iron-deficiency anaemia last year.

Today, Catherine's mum is very tired and frustrated. She has tried going to the local Tresillian residential centre¹ to help with settling techniques with Catherine, but could only stay for one night as Alex became distraught and she had to return home. She appears teary and anxious.

Genogram for Scenario 1



¹ **Tresillian Family Care Centres** - a child and family health organisation providing expert parenting advice to families during the early years: <https://www.tresillian.org.au/>

SGS 1 - Introduction and Overview of the first four years of life

Aims:

- To identify and explore the issues raised by the scenario.
- To highlight the relevance and context of some of the main content areas to be addressed in this course.
- To familiarise students with the assignment and project options.
- To introduce students to paediatrics through an overview of the first four years of life.

Key concepts:

- Group formation.
- Collaborative and scenario-based learning process.
- Course assessment requirements.
- Contextualising the contents of this course.

Resources needed:

- Video: Human Body series - First steps [Available on Moodle in the Scenario 1 learning materials for SGS1]

Process:

1. Introductions and establishing the group
2. Review of project and assignment options and key dates
3. Explore the scenario plenary and identify key issues
4. Human Body series: First steps
5. Preparation for SGS 2

Activity 1. Welcome, introductions and establishing the group

The SGS will open with an opportunity for the facilitator and students to become familiar with one another and to lay some ground rules for respectful behaviour.

Activity 2. Review the project and assignment options

Refer to the section on Assignments and the Child Health Group Project towards the back of your guide.

Important Dates:

Negotiated Assignment Expression of Interest (EOI) eMed registration – **9:00 am Wednesday, 24 April** (Week 1)

Negotiated Assignment **Proposal submission** eMed registration for **approved EOI** – **9:00 am Monday 29 April** (Week 2)

All other assignment and project registrations – **4:00 pm Friday, 3 May** (Week 2)

Assignments due – **9:00 am Monday, 20 May** (week 5)*

Negotiated Assignments due – **9:00 am Monday, 27 May** (week 6)

Group Projects due **9:00 am Monday, 3 June** (week 7)

*Note: students who had a Negotiated assignment proposal rejected will be given a one-week extension.

The date and time of the BGD-B EOC exam TBA.

Activity 3. Explore the scenario plenary and identify key issues

This activity will provide an opportunity to discuss the plenary lecture and to identify the main issues raised by the scenario.

Activity 4. Human Body series: First steps

The three “First Steps” video clips from the Human Body series are available on Moodle in the Scenario 1 learning materials for SG1. These videos introduce you to paediatrics, with an overview of the first four years of life. Make notes while watching the clips and complete the worksheet for this activity.

Activity 5. Preparation for SGS 2

- 1) Students should complete the module on Breastfeeding and infant formulas found in Moodle before SGS 2.
- 2) Students should use the following materials to complete the “Infants-First Foods” table in SGS 2. In this table you are asked to list what you think is important for good infant nutrition, good feeding practices for infants and practices which should be avoided.
 - **Video:** Healthy Feeding, Healthy Baby: Eat for Health – Infant Feeding Guidelines (running time: 23 minutes). This video is available on Moodle in the Scenario 1 learning materials for SGS 1. This is essential viewing, and the 2013 NHMRC Infant Feeding Guidelines are discussed.
 - Baby’s first foods. Sydney Children’s Hospital Network. [Infant and baby nutrition | SCHN Site \(nsw.gov.au\)](https://www.schn.org.au/nutrition-and-dietetics/baby-and-toddler-nutrition/baby-s-first-foods). This link is also available on Moodle in the Scenario 1 learning materials and provides a good summary of information on first foods intended for parents.
 - Introducing solids: why, when, what and how <https://raisingchildren.net.au/babies/breastfeeding-bottle-feeding-solids/solids-drinks/introducing-solids> This provides a guide intended for parents on introducing solids in the diet of their babies. This link is also available on Moodle in the Scenario 1 learning materials.
 - Brunacci, K. A., Salmon, L., McCann, J., Gribble, K., & Fleming, C. A. K. (2023). The big squeeze: a product content and labelling analysis of ready-to-use complementary infant food pouches in Australia. *BMC Public Health*, 23(1), 656–656. <https://doi.org/10.1186/s12889-023-15492-3> https://unsw.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60916951860001731?auth=SAML

FIRST STEPS Part 1 <ol style="list-style-type: none">1. Note the features highlighted at birth 2. What was the feature of the foetal heart that was highlighted in the video? 3. What did the video highlight as a feature of the foetal head that was required for its passage through the birth canal?	
FIRST STEPS Part 2 <ol style="list-style-type: none">4. Note the various reflexes that are shown in the video 5. Note the features highlighted at 6 months	
FIRST STEPS Part 3 <ol style="list-style-type: none">6. What do you understand about the terms 'development' and 'milestones'? 7. Note down a few of the milestones that are highlighted in relation to:<ol style="list-style-type: none">a. Motor development (e.g. walking)b. Language development	

SGS 2 – Nutrition through the ages

Aims:

- Identify the nutritional needs of babies in their first 6 months of life.
- Understand the basics of transition to solids.
- Gain an insight into some of the problems associated with feeding toddlers and learn some tactics for improvement.
- Examine nutritional aspects of school age children and show how improving food knowledge may alter fussy eating behaviour.
- Gain an understanding of iron deficiency anaemia in young children.

Key concepts:

- Key nutritional issues at various ages and stages.
- Weaning foods.
- Fussy eating and strategies to deal with it.
- Nutritional issues related to fussy eating.
- Healthy eating in school age children.

Resources needed:

- Dietary Guidelines for children & adolescents in Australia can be found on:
NHMRC. (2013). Australian Dietary Guidelines.
<https://www.nhmrc.gov.au/adg>
- NHMRC. (2012). Infant Feeding Guidelines: information for health workers.
<https://nhmrc.gov.au/about-us/publications/infant-feeding-guidelines-information-health-workers>
- Serving sizes and tips on healthy eating for kids based on a summary of the Australian Dietary Guidelines.
https://www.eatforhealth.gov.au/sites/default/files/content/The%20Guidelines/n55f_children_brochure.pdf
- Video: Fussing about food: dealing with food rejection [4:23 min].
(<https://www.futurelearn.com/info/courses/infant-nutrition/0/steps/25423>)
- Link between Autism and Fussy Eating.
<https://www.sciencedirect.com/science/article/pii/S1750946722000150>
- Video: Fussy eating challenges in a child with autism [4:15 min].
(<https://6e6ouiploa.execute-api.ap-southeast-2.amazonaws.com/prod/resource/76FD0C67-89B1-4CC0-9BCA0C560860471B>)
- Ellyn Satter's 'Division of Responsibility in Feeding' (<https://www.ellynsatterinstitute.org/how-to-feed/the-division-of-responsibility-in-feeding/>)
- Videos from the Raising Children website:
How to tell if your child is eating enough [1:06 min]
(<https://raisingchildren.net.au/toddlers/videos/eating-enough>)
Sharing healthy snacks with children [1:25 min] (<https://raisingchildren.net.au/toddlers/videos/healthy-snacks>)
Setting a good example by eating healthy food yourself [0:26 min]
(<https://raisingchildren.net.au/toddlers/videos/eating-healthy-food-yourself>)
Sometimes foods and kids [2:11 min] ([Sometimes foods and kids \(youtube.com\)](https://www.youtube.com))
- Jamie Oliver "Jamie's School Dinners" video clip [Available on Moodle in the Scenario 1 learning materials for SGS2]
- Sydney Children's Hospital Network's fact sheet on breastfeeding
(<https://www.schn.health.nsw.gov.au/breastfeeding-factsheet>)

Process:

1. Infants – First Foods
2. Toddler Eating Behaviours
3. School age – Jamie Oliver
4. Case study – Toddler diet
5. Choosing assignments and projects
6. Preparation for SGS 3

Activity 1. Infants – First Foods

Based on SGS preparation material of the following table, students should discuss ‘what’ are good infant feeding practices and ‘why?’ What do you think is important for good infant nutrition and what should be avoided.

	Good Practice		To be avoided	
Age of child	What	Why	What	Why
Birth				

6 months				
7 – 8 months				
9–10 months				

12 months				
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Activity 2. Toddler Eating Behaviours

This video will take you through toddler eating behaviours. You should make notes of key points while the video is playing. These notes will serve as starting points for class discussion.

Preschool Part 1: Fussing about food: dealing with food rejection

Section 1: Food Refusal Is Common

- **What are some of the signs of food refusal?**

- **What are some of the concerns a parent may have when their child does not eat?**

- **Why is fussy eating a normal part of toddler development?**

Section 2: Division of Responsibility

- Who is responsible for a child eating well?

- How can parents encourage good eating for their children?

Preschool Part 2: How can a parent tell if their child is eating enough?

- Why does a toddler's food intake change each day?

- How can parents tell if a child is eating enough?

- What drinks are appropriate for young children?



Preschool Part 3: Modelling Good Eating Habits

- List the reasons parents should eat with their toddler.

- What are other ways parents can model good eating habits?

Preschool Part 4: Encouraging Healthy Habits

- What strategies can parents use to deal with ‘sometimes food’?

- What was your experience of ‘sometimes food’ or junk food when you were growing up?

Activity 3. School age - Jamie Oliver

This video is an excerpt from “Jamie’s School dinners”, a four-part TV documentary series from the UK. It examines some of the poor food knowledge of school age children and the ability to alter fussy eating behaviour by improving children’s knowledge of and interest in food. Make notes of key points to serve as starting points for class discussion.

Activity 4. Case Study: - Toddler diet**CASE STUDY:****Presentation**

This scenario takes place in the past year before Catherine was born. You are a GP in a busy suburban clinic. Alex (from the plenary) is a 22-month-old male toddler at this time, has been referred to the GP after the Early Childhood Nurse noted his pallor. His mother is pregnant (with Catherine) and says that Alex is a really fussy eater.

Alex's past medical history

- Born 40/40 (i.e. at term), NVD (normal vaginal delivery)
- No family history of blood disorders, leukaemia

Growth

The blue book (Personal Health Record) had the following measurements:

Age	Length (cm)	Centile	Weight (kg)	Centile	Head Circumference (cm)	Centile
Birth	55.6	97 th	3.8	90 th	35	50 th
3/12	61.6	50 th	6.9	75-90 th		
15/12			11.5	50-75 th		
22/12	84.3	50 th	11.5	25-50 th	47	50-98 th

Social

- Only child at the moment.
- Mixed ancestry. His father was born in China (father has a Chinese mother and Australian Anglo-Irish father) and grew up in Australia. Alex's mother was born in Australia with Italian migrant parents. Only extended family in Sydney is father's mother who is widowed and recently moved to Sydney from China to live with them.
- Father does shift work. Mother works most days of the week.
- Alex is cared for at home by paternal grandmother. On waiting list for day care.
- Family is bilingual (Paternal grandmother speaks mainly Mandarin; Father speaks Mandarin and English; Mother speaks English).

Examination

- Very pale child and generally tired and lethargic.
- No bruising/bleeding/limb pain or blood in stools.
- No clinical signs to suggest diagnosis of viral illness, leukaemias, thalassaemia and lead intoxication.
- Reaching developmental goals – crawled at 6/12, walked at 11/12.
- However, mother is concerned that Alex is not talking at 22 months of age.

Biochemistry

Test	Result	Reference range
Hb	84 g/L	104-132 g/L
Fe	5.0 µmol/L	8.1-32.6 µmol/L
Transferrin	3.3 g/dL	1.8-3.3 g/dL
Transferrin saturation	12%	20-52%
Ferritin	1 µg/L	20-300 µg/L
Microcytosis	Marked	
Hypochromasia	Marked	

Glossary:

transferrin – plasma transport protein used for iron delivery to cells.

transferrin saturation – the ratio of serum iron to iron-binding capacity, expressed as a percentage.

ferritin – a protein complex that is the main intracellular storage protein for iron. Serum levels correlate directly with total body iron stores.

microcytosis - a blood disorder characterized by the presence of microcytes (abnormally small red blood cells) in the blood; often associated with anaemia.

hypochromasia - an anaemic condition in which the percentage of haemoglobin in red blood cells is abnormally low.

Feeding history

- Breastfed to 5/12
- Changed to S26 Gold when cut teeth and continued this to 13/12 when cow's milk was introduced.
- Solids introduced at 6 months (rice cereal, fruit, vegetables, pureed meat)

Feeding patterns

- Fruit: apples. Will suck juice from oranges.
- Veg: corn, spinach (but only in soups).
- Dairy: milk, custard, yoghurt.
- Meat: chicken (offered almost every day) but doesn't always eat.
- Breads & Cereals: white bread and rice.

Diet history

Breakfast 7.30 am

180 ml milk (out of bottle)
3-4 tsp baked beans OR "Petit Miam" yoghurt (half of a 60 g tub)

Morning tea 11.00 am

180 ml milk (then has a sleep)

Lunch 2:00 pm

180 ml milk
1 Slice plain bread or McDonalds fries ($\frac{1}{2}$ small pkt)
Iced tea

Afternoon tea 5:00 pm

180 ml milk

Dinner 6.30 pm

Chicken and spinach soup or chicken and corn soup with rice ($\frac{1}{4}$ - $\frac{1}{2}$ of a bowl)
OR chicken sausages and rice (2-3 pieces)
125 ml apple and blackcurrant juice (diluted with water 50/50)

Bedtime 9.30 pm

180 ml milk (out of bottle)

Overnight ~3:00-4:00 am

180 ml milk (out of bottle)

Mealtime Behaviours

- Will only drink milk from a bottle with normal teats but will drink juice from a spoon.
- Picks food off parents' plates at dinner but doesn't eat it.
- Does not feed self.
- Likes same foods every day, does not like new foods.
- Eats in lounge room on chair in front of TV.
- Meals take up to an hour.
- Prefers puree textures – spits out or pockets lumps in mouth.
- Demands milk and becomes upset when he doesn't get it.

CASE QUESTIONS**1. What is happening here?**

Symptoms and signs:

Investigations:

Blue Book measurements:

Dietary History:

Feeding history:

2. What factors in Alex's diet could be contributing?

(Hint: consider social factors and behaviour as well as current intake)

3. What diet-related condition could explain Alex's symptoms?**4. What socio-cultural factors could be contributing to Alex's problem?**

5. Do you think that this is an acute issue, or has it occurred over a period of time? Why?

6. What recommendations would you make for the nutritional management of this child?

Remember to include practical strategies for his parents.

Activity 5. Choosing assignments and projects

Activity 6. Preparation for SGS 3

- Students will need access to the **lecture notes** from “Growth in Childhood” lecture in SGS 3.
- **Pre-read** the following articles (on Moodle):
Berger, K. S and Thompson, R. A. (1995). *The Developing Person: Through childhood to adolescence*. New York: Worth Publishers. pages: 176-177, 295-297 & 412-413.
Motil, K. J. and Duryea, T. K. (2020, March). *Patient education: Poor weight gain in infants and children (Beyond the Basics)*. UpToDate. <https://www.uptodate.com/contents/poor-weight-gain-in-infants-and-children-beyond-the-basics>
- If you have a tape measure at home, practice making measurements of height and head circumference. Instructions are given in SGS3.

SGS 3 - Growth in Childhood

Aims:

The aims of this session are for students to develop an understanding of:

- normal growth;
- the determinants for normal growth;
- some of the causes of poor growth;
- the use of growth charts;
- how to identify worrying trends on growth charts and determining possible causes.

Key concepts:

- Requirements for normal growth (nutritional, psychological, hormonal, genetic).
- Causes of poor growth.
- Accurate measurement of growth in children, including height, weight, head circumference and the use of centile charts.
- Reading normal and abnormal growth charts – how to identify features of concern.
- Reasons why growth may be under or over what is expected.

Resources needed:

- Articles for pre-reading (on Moodle):
 - Berger, K. S. and Thompson, R. A. (1995). *The Developing Person: Through childhood to adolescence*. New York: Worth Publishers. Pages: 176-177, 295-297 & 412-413.
 - Motil, K. J. and Duryea, T. K. (2020, March). *Patient education: Poor weight gain in infants and children (Beyond the Basics)*. UpToDate. <https://www.uptodate.com/contents/poor-weight-gain-in-infants-and-children-beyond-the-basics>
- Lecture notes for ‘Growth in Childhood’.
- Blank growth charts for boys 0-36 months (in guide); Max’s weight, height and head circumference data.
- Measuring children’s growth video clips (two videos: 2-week-old baby and 2-year-old child) Measuring Growth, Royal Children’s Hospital Melbourne.
https://www.rch.org.au/childgrowth/Practical_Growth_measurement/
- Tape measure for measuring height and head circumference (if available).

Process:

- | |
|--|
| 1. Measuring and plotting your own growth parameters |
| 2. Discussion of normal childhood growth |
| 3. Max’s growth charts |
| 4. Interpreting other growth charts |
| 5. Preparation for SGS 4 |

Activity 1. Measuring your own growth parameters

Watch the video from NSW Health https://www.youtube.com/watch?v=YWKOMIz_RCE and KK Women’s and Children’s Hospital <https://www.youtube.com/watch?v=kokbecaFufo> showing principles on how to accurately measure an infant and a child’s height and weight. If you have access to a tape measure, try taking measurements of your own head circumference, or practice on your immediate family or friends where possible and safe to do so. Full descriptions of the correct method to make the measurements are given below.

- **What difficulties do you expect when making these measurements?**

- How would you adapt your technique for a child?
- Measurements of head circumference and height from a previous SG group was collected and are shown below. What are the potential reasons for the variability in this data?

Name	Height (cm)	Head circumference (cm)
James	186 cm	58.5 cm
Iris	164 cm	54.0 cm
Vikram	174 cm	58.3 cm
Yuting	155 cm	53.6 cm
John	163 cm	54.5 cm
Tesa	168 cm	55.8 cm
Baoling	166 cm	55.2 cm
Siddhartha	179 cm	57.7 cm
Sylvia	159 cm	52.8 cm
Jonah	170 cm	57.1 cm

- How accurate do you think these measurements are? What can interfere with accuracy of growth measurements?
- Why is it important that these measurements are accurate?

HOW TO ACCURATELY MEASURE GROWTH PARAMETERS

Standing height and supine length

Measurements of height and length should be recorded to the nearest 0.1 cm. Measurement of length is greater than that of stature by up to 1 cm in any one subject, and it should be recorded which of these measurements was taken. The customary age for changing the measurement from length to height is around 2 years, depending on the child's ability to cooperate.

Height

The position of the child is crucial. Poor positioning results in an inaccurate measurement. The simplest approach is to begin at the feet and work upward. The feet should be together and flat on the ground with the heels touching the backboard or wall. The legs should be straight with the buttocks and, if possible, the scapulae against the backboard. The arms should hang loosely at the side of the body. The head should be positioned carefully, with the lower margins of the orbit in the same horizontal plane as the external auditory meati. Head tilt is avoided by instructing the child to look straight ahead. This is the correct position for the measurement of stature. The headboard of the apparatus should then be placed carefully on the head. It helps to place a small weight of approximately 0.5 kg on the headboard. This serves two functions: it ensures good contact between head and headboard and compresses the hair. One final point to remember before a height measurement is recorded is the tendency for people to shrink during the day. This occurs in children and adults and is a consequence of the effect of gravity on the intervertebral discs. The diurnal variation is about 7 mm. Unless a child is always measured at the same time of day, the diurnal variation in stature will introduce a difference into the measurement. Stretching is ineffective in preventing diurnal variation. Thus, the sequence of events for accurate measurement is as follows:

1. Check the instrument with a calibrated rule.
2. Ensure the child is in the correct position. In all cases remove shoes, socks, bulky clothing, and hair ornaments.
3. Ask the child to breathe in and when the child inhales exert upward pressure on the mastoids.
4. Ask the child to breathe out and relax, meanwhile maintain pressure on the head; once the child has fully exhaled take the measurement.
5. Lower the headboard and ensure good contact with the head.
6. Read the instrument at eye level to avoid parallax error, rounding down to the nearest mm.
7. Record the measurement with care, write the figure down and plot the height on the growth chart.
8. Note time of day, instrument used and name of measurer.
9. With very young children, an assistant is required to ensure knees do not bend and heels remain down.

BMI percentile calculator (CDC charts): <https://www.cdc.gov/healthyweight/bmi/calculator.html>

Reference:

De Sanctis, V. (2001). *Manual of growth charts and body standard measurements*. (2nd ed.). Pisa: Pacini Editore S.p.A.

Head circumference

Head circumference (HC) is measured by placing a tape round the glabella and supraorbital ridges anteriorly and the maximum occipital protuberance. Hair ornaments and braids should be removed. The tape is moved up and down over the back of the head to locate the maximal head circumference. The tape should be firmly pressed against the head to compress the hair. This measurement is regarded as an indicator of brain growth. There is general agreement that the two most important factors, which influence HC are the sex and age. A stable HC centile curve is reached at the age of 13 months in 95% of babies. Circumference is measured to the nearest millimetre.

Reference:

De Sanctis, V. (2001). *Manual of growth charts and body standard measurements*. (2nd ed.). Pisa: Pacini Editore S.p.A.

Length

Supine measurements should be taken in the younger child who cannot stand (less than 2 years of age) or in older children who cannot stand because of disability. Appropriate equipment requires a firm flat base, on which the infant lies supine, and a headboard and a footboard. Care should be taken in positioning, requiring two people. One person ensures the head is correctly positioned in proper contact with the headboard, and the other confirms that the back, legs and feet are positioned correctly with the feet flat against the footboard. Length is recorded to the nearest millimetre.

Reference:

De Sanctis, V. (2001). *Manual of growth charts and body standard measurements*. (2nd ed.). Pisa: Pacini Editore S.p.A.

Weight

Babies and infants should be weighed naked and older children with minimum clothing. Serial measurements should preferably be made on the same scales. Care should be taken to ensure the child does not touch any object alongside the scales. Sometimes with difficult children it is easier for weight to be ascertained as the difference between the weights of an adult holding the child and then standing alone. Weights can be recorded to the nearest 0.1 kg, greater accuracy than this being without value in view of the marked weight changes in normal children from day to day under the same circumstances.

Reference:

Buckler, J.M.H. (1997). *A Reference Manual of Growth and Development*. (2nd ed.). Oxford: Blackwell Science

Activity 2. Discussion of normal childhood growth

Drawing on the information from the prereading material and the “Growth in Childhood” lecture, answer the following questions on childhood growth.

Group Questions:

1. **What is the average birth weight and length in Australia?**

2. **How does the rate of growth change over childhood?**

- **First few weeks**

- **First few months**

- **6 months – 12 months**

- **1-2 years**

- **>2 years**

- 3. What is the order of growth of the body compartments (fat, bone muscle)?**
 - 4. What are the changes in body proportions during childhood?**
 - 5. Can you predict a child's ultimate height and trajectory of growth from their parents' growth?**
 - 6. What are the main factors that facilitate normal growth in children?**
 - 7. What are the some of the causes of growth failure in children?**

Activity 3. Max's growth charts

Max was born at 38 weeks gestation on the 8/8/02. At birth, he weighed 2.640 kg and measured 50 cm in length and his head circumference was 33 cm. Max's medical child health records, that include his weight, length and head circumference measurements taken over several GP visits are provided on the following pages.

Students will work in groups of three or four to:

- **Calculate** the ages at which measurements were taken and **record** Max's growth data in the summary table that follows the health records. (Note: abbreviations, i.e. 3/52 means 3 weeks and 7/12 means 7 months).
- **Plot** Max's length, weight and head circumference on the growth charts provided.
- **Consider** what these growth plots show. **Answer** the first three questions about Max's growth using the pre-reading material.

Discussion of Max's growth charts

1. **Should we be concerned about Max's growth?**
2. **Where does the information in the growth charts come from?**
3. **What do the percentile curves represent?**
4. **What range is considered normal for growth measurements using these charts?**
5. **What is 'NORMAL'?**

Max's medical child health records:

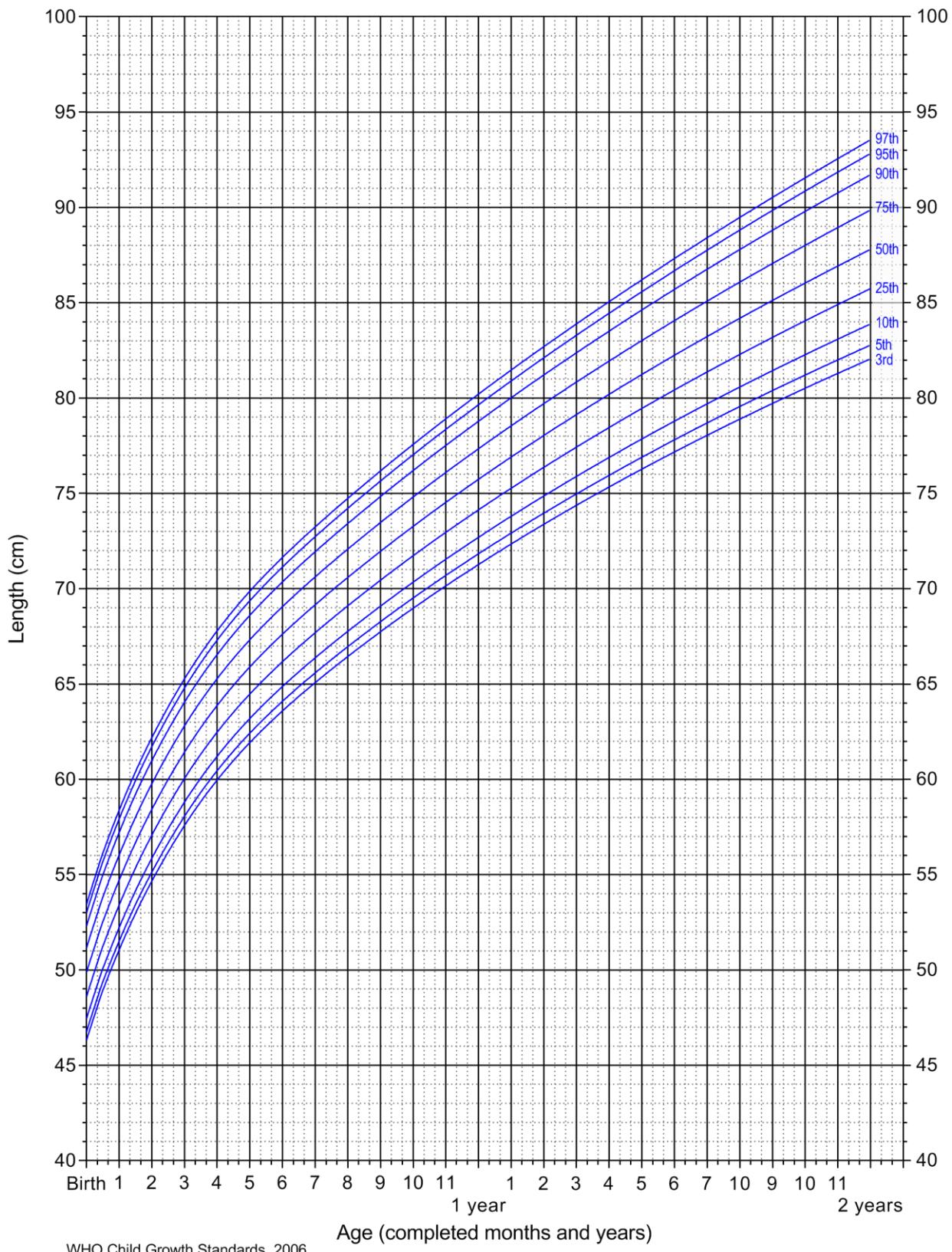
Date	Age	Reason / Action
28/8/02	3 1/2	L54cm W3.3kg HC 35.5cm breast feeding ✓ bowels ✓ hips ✓
12/9/02	5 1/2	W 4.4kg L54cm HC 38.5cm minimal stimulation until after 8 wks or take for walk if necessary
24/9/02		L56cm W5.1kg HC 39cm root nipple until healed and express. return to breast slowly. 15 min max. try alternating position
15/10/02	10 1/2	W 5.8kg L58cm HC 38.75cm
7/11/02	3 1/2	W 6.32kg L60.7cm HC 40.6cm 4.6 * more floor play > tummy play

Date	Age	Reason / Action
5/12/02	4 1/2	W 6.84kg L63.5 HC 41.5 B/F > S/24hr. good growth, wt slowed introduce solids: 1st wk baby cereal - dinner. 2nd wk - baby cereal b/fast + dinner + fruit. 3rd wk - baby cereal b/fast, vegetable - lunch, cereal + fruit dinner. Give milk (breast) before solids. Introduce a new fruit or veg every 3-4 days.
7/1/03	5m	L67 W 7.3 HC 42.8 continues on daily solids. Has had peas - apple with no ill effects. Rolling onto side, reaching out + grasping objects. Bubbling ++ Laughing ++
		4.6

Date	Age	Reason / Action
11/2/03	6m	W 7.5 L 69.5 HC 43.5
11/3/03	7m	W 8.0 L 70 HC 43.7s Rolling to get toys. Sitting for a little while, way of stronger
8/4/03	8m	W 8.35 L 72.25 HC 44.5 clapping hands, commands crawls to get the remote. Sits well alone
6/5/03	9m	W 8.9 L 72.5 HC 45 commands crawling, rocking on all fours. Pulling up on the coffee table. Way of stronger

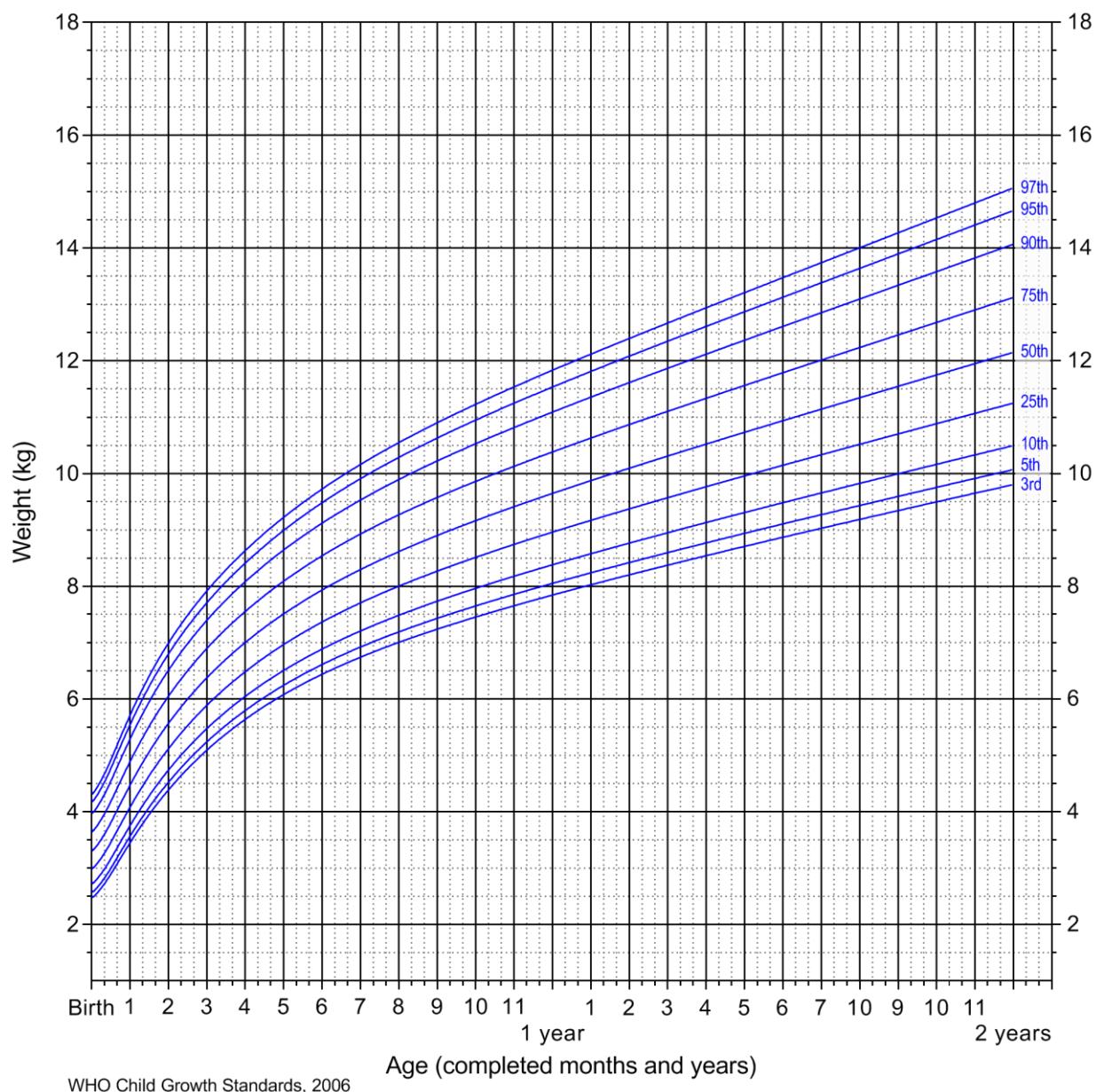
Date	Age	Reason / Action
10/6/03	10 1/2	9.3 L 73 HC 45.5 6 teeth. Accident prevention. 3 feeds of finger + family taste water in a cup
8/7/03	11 1/2	9.5 L 76 HC 46 cruising around furniture managing finger foods
22/8/03	12 1/2	10.0 L 78 HC 46.8 8 teeth, hearing, walking alone Get rid of bottles Cups of milk with meals Water in a cup between meals Fruit as snacks

Summary of Max's growth data:

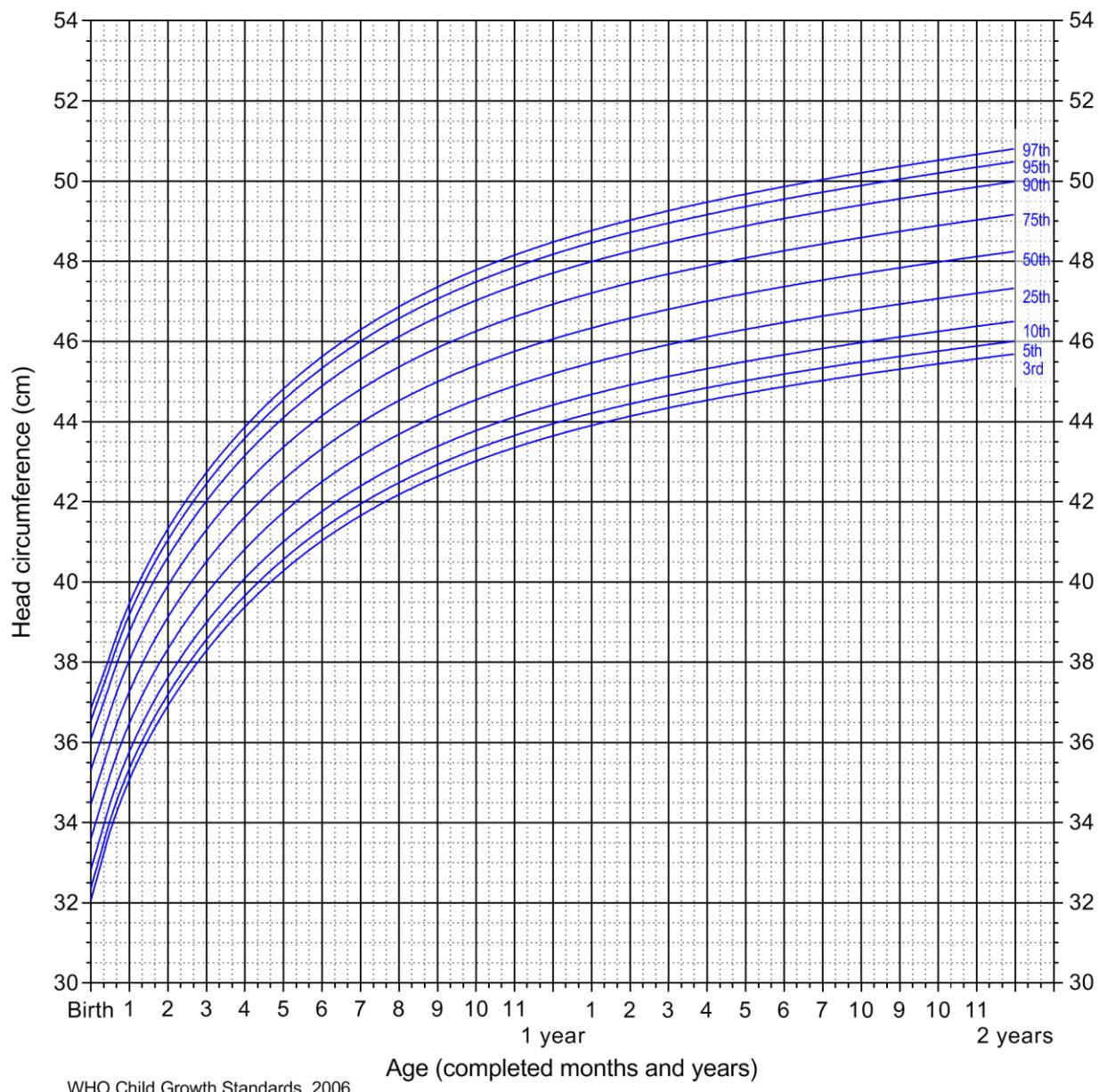
Length-for-age, 0-24 months, Boys

WHO Child Growth Standards, 2006

Weight-for-age, 0-24 months, Boys



Head circumference-for-age, 0-24 months, Boys



WHO Child Growth Standards, 2006

Activity 4. Interpreting other growth charts

As a group, work through the Growth Charts cases on the PowerPoint slides provided. These cases are to help illustrate the use of growth charts in identifying clinical and social problems that might need intervention. The following glossary will also assist in the interpretation of the cases.

Glossary:

Bone age describes the degree of maturation of a child's bones. Determined by comparing an X-ray of the hand and wrist with a standard X-ray from a child of the same age and gender. Because of effects of puberty on bone maturation bone age often relates more to sexual maturity than chronological age. A bone that is too mature for a child's age may indicate early puberty, while immature bones may be due to developmental delay. Bone age can also give an indication of the remaining growth potential of a child.

Tanner stages. These are used to define stages (1 to 5) of development of the breasts, penis and pubic hair during puberty.

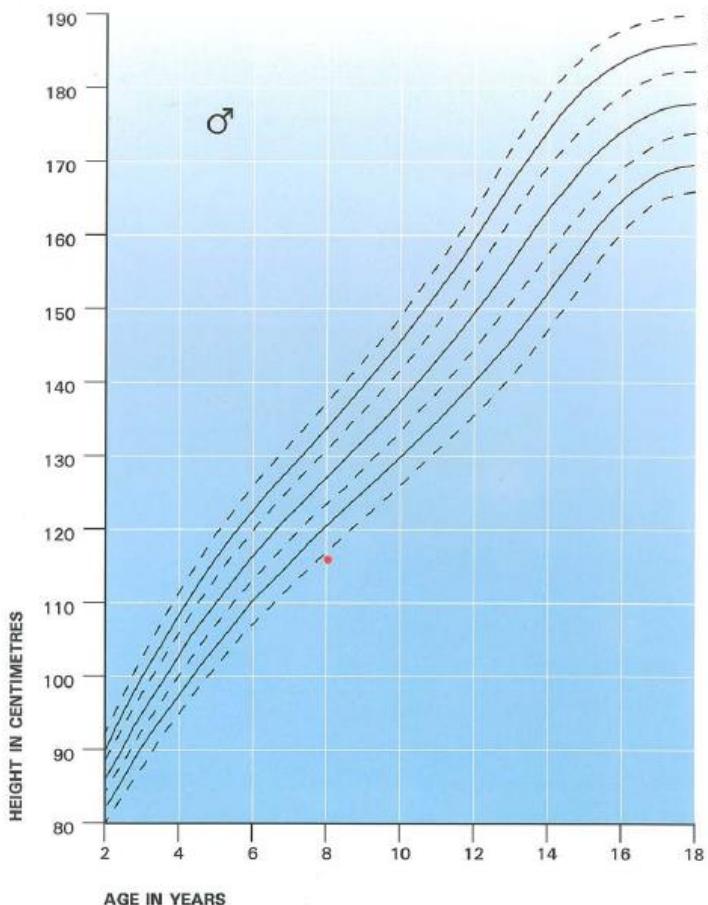
Testicular volume. Testicular enlargement is the first physical manifestation of puberty in males. Prepubertal volume is <4 mL. Post pubertal volume around 20 mL. Traditionally, testicular volumes have been measured with different type of orchidometers. Orchidometers are a series of oval shaped beads, which gradually increase in size. They are used for assessing the size and volume of human testes. Testicular size is assessed by placing the beads of the orchidometer alongside the boy's/man's testicles, in order to identify the bead, which is closest in size to the testicle.

Sella turcica – small depression in the skull containing the hypophyseal fossa, which holds the pituitary gland.

Case 1

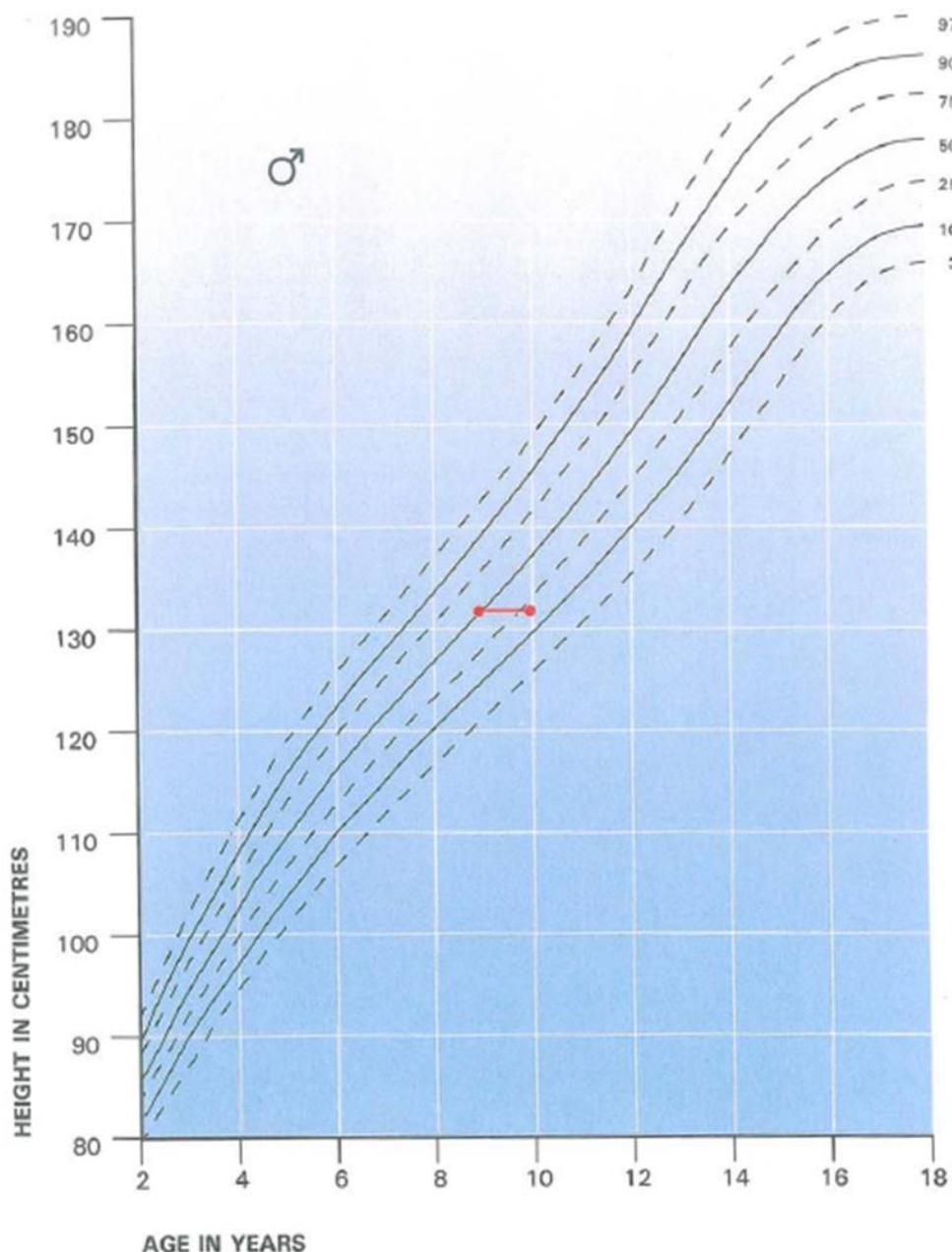
Paul, who is 8 years old, has always been shorter than his peers. He is healthy but would like to be taller as his friends often tease him. His parents ask, "Can't you give him something to make him grow better?"

Diagnosis:



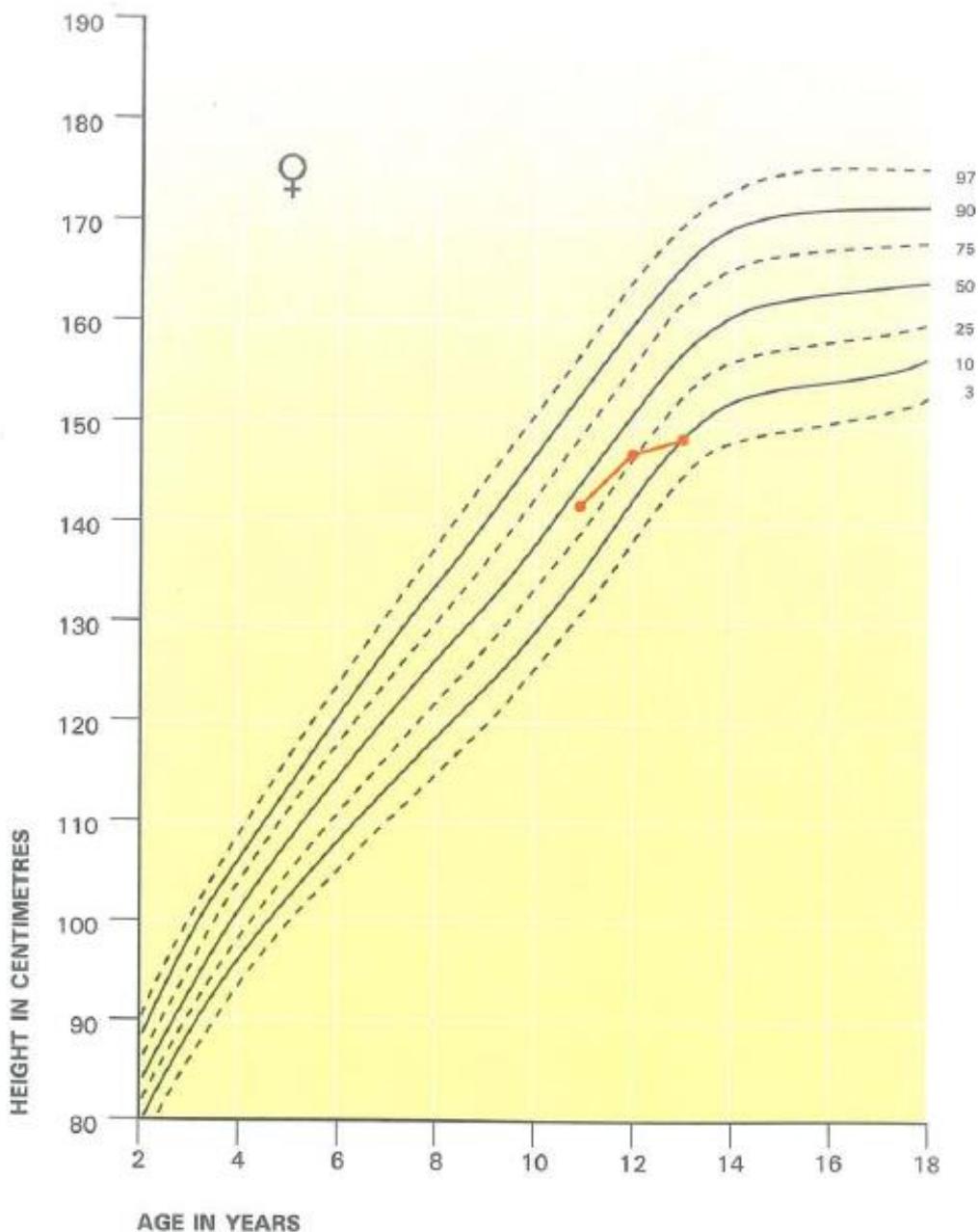
Case 2

Michael, aged 10, is referred after a school check-up because he has not grown at all since the last examination one year ago. Michael is a very active boy, successful in sports. Michael's father, is doubtful that there is a problem - "Michael has outgrown his trousers this year; he must have grown at least 5 cm."

Diagnosis:

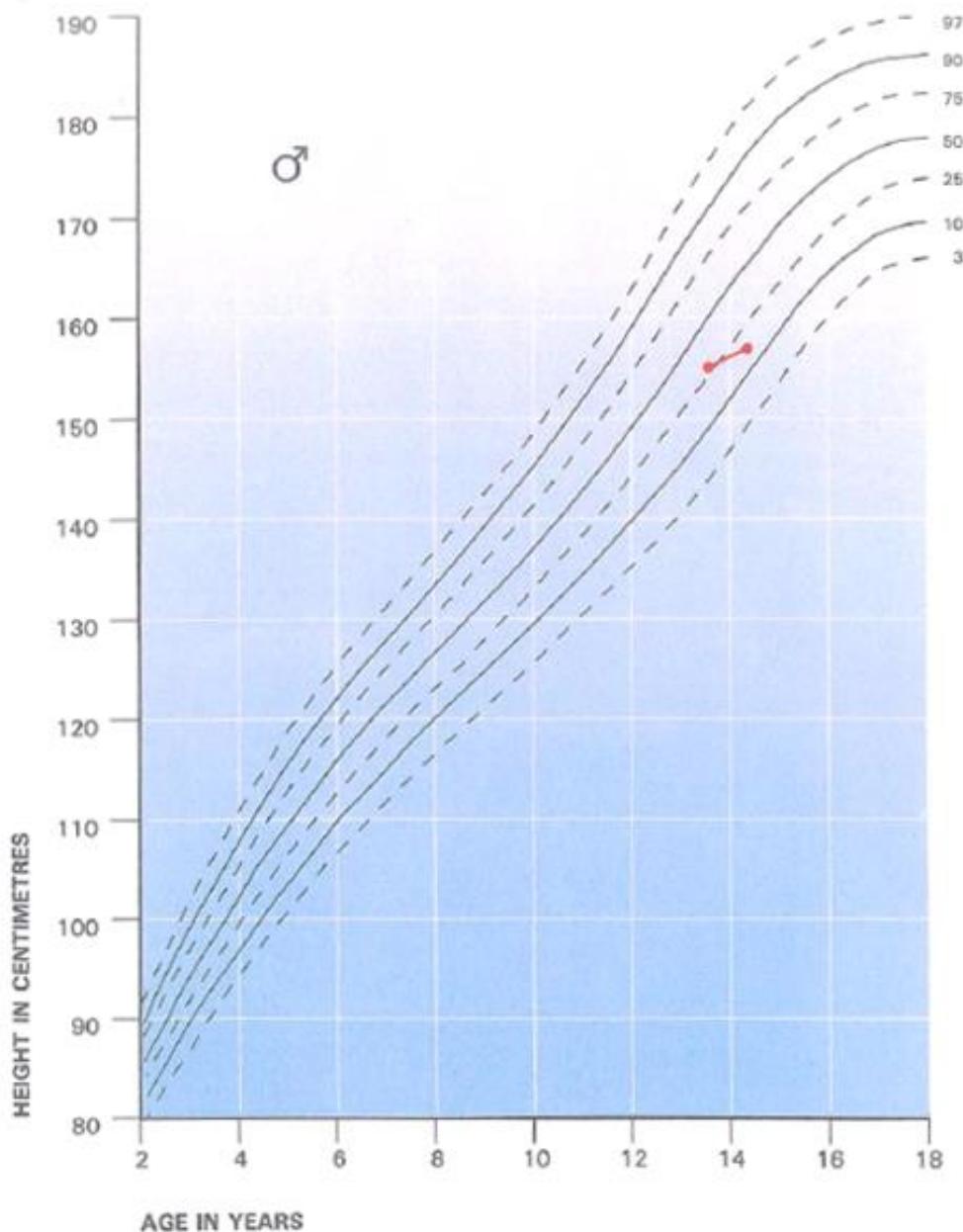
Case 3

Anna, 13 years old, adopted from Sri Lanka at 6 months of age. She was average height several years ago, but Anna and her parents are now worried because she is growing slower than her schoolmates. Menarche (start of menstruation) at 10.1 years.

Diagnosis:

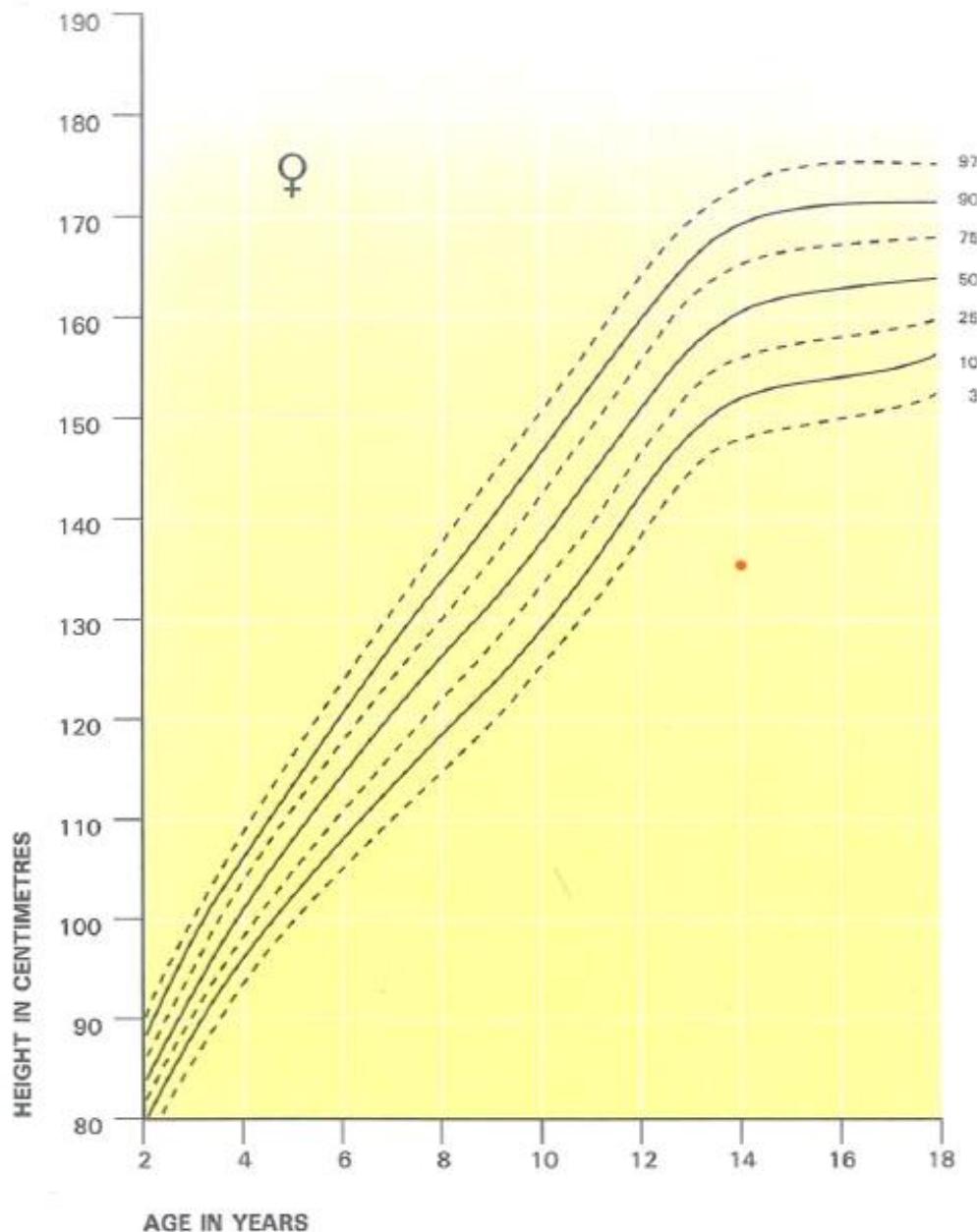
Case 4

Stephen is 14½ years old. He has come to the growth clinic because he has hardly grown during the past year. Almost all the boys in his class are now taller than him. He was previously of average height in his class.

Diagnosis:

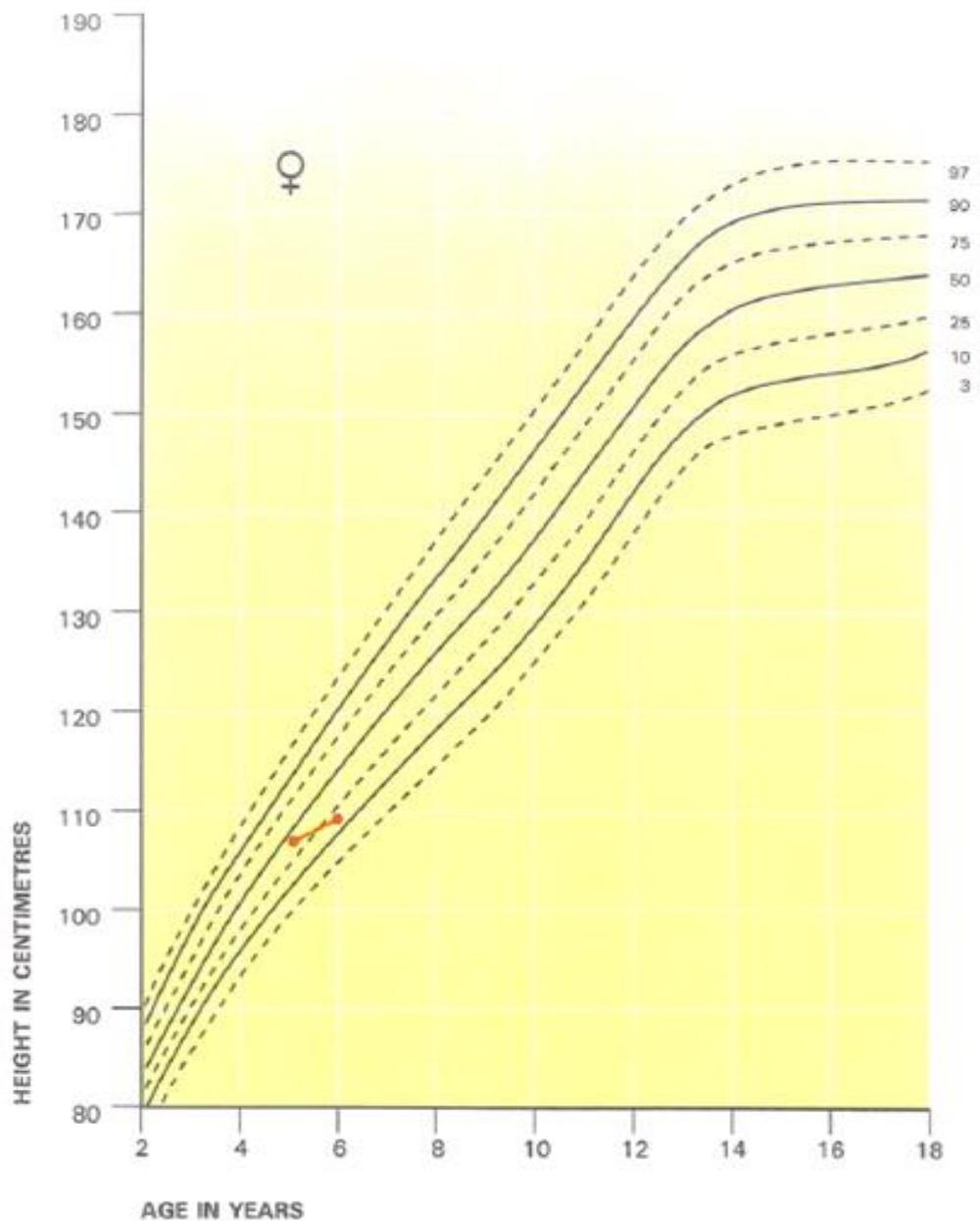
Case 5

Jenny, age 14, is referred from her GP because she is much shorter than her friends. She is a pleasant and happy girl who has always been short. Jenny performs normally in school and has several friends. She is not tired and does not experience changes in mood.

Diagnosis:

Case 6

Susan, 6 years old, is referred from her physician because of slow growth during the last year. Susan used to be a very active girl but has now become calmer and quieter. She has been constipated and intolerant of the cold.

Diagnosis:

Activity 5. Preparation for SGS 4

- Students will need access to their **notes** from the “Cognitive Development” lecture for SGS 4.

- **Pre-read** the article (available on Moodle)

Nixon, D. and Gould, K. (1996). Emerging: Child development in the first three years. Katoomba: Social Science Press. Chapter 4: Language Development, pages 83-92.

https://unsw.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/35241132360001731?auth=SAML

- Watch the video: Baby Its You - Word of Mouth (25 mins)

[Available on Moodle in the Scenario 1 learning materials for SGS4]

- Make notes about the key stages of language development in the Table provided in SGS 4.

- **Additional Reading:**

Gleason JB. (2024). The development of language: Plural Publishing. Chapter 1: The development of language: An overview and preview, pages 1-10.

https://unsw.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60092154830001731?auth=SAML

SGS 4 – Language, learning and cognitive development of children

Aims:

This session aims to help students develop their understanding of:

- the key stages of language development;
- the stages of cognitive development in children;
- the determinants for normal cognitive development;
- reasons why cognition may be delayed.

Key concepts:

- Stages of language development (pre-language communication, first words, holophrases, telegraphic speech, sentences).
- Baby-talk - its characteristics and its function.
- The broad stages of cognitive development in children proposed by Piaget.
- How cognitive development helps children develop different interactions with their environment (object permanence, theory of mind, imaginary friends).
- The requirements for normal cognitive development.
- Reasons why cognition may be delayed.

Resources needed:

- **Stages of Language Development: (preparation for this session)**

Nixon, D. and Gould, K. (1996). Emerging: Child development in the first three years. Katoomba: Social Science Press. Chapter 4: Language Development, pages 83-92.

https://unsw.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/35241132360001731?auth=SAML

[Link also available on Moodle in the Scenario 1 learning materials for SGS4]

- **Video clip:** Baby Its You - Word of Mouth (preparation for this session)

[Available on Moodle in the Scenario 1 learning materials for SGS4]

- Video clip: Speech Milestones: Baby Talk - First Sounds to First Words (5.5mins)

<https://www.youtube.com/watch?v=a7WAFwKi88Q>

- **Cognitive development of infants and young children:**

Video Clip: Child's World – Mind Games

[Available on Moodle in the Scenario 1 learning materials for SGS4]

- **Imaginary friends: Video clip:** ABC Catalyst. (2009). *Imaginary Friends*

[Available on Moodle in the Scenario 1 learning materials for SGS4]

Additional Resources:

- Gleason JB. (2024). The development of language: Plural Publishing. Chapter 1: The development of language: An overview and preview, pages 1-10.

https://unsw.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60092154830001731?auth=SAML

Process:

1. Key stages of language development
2. Cognitive development of infants and young children
3. Preparation for SGS 5

Activity 1. Key stages of language development

Babies learn to talk through a range of predictable stages. The first part of this session will consider these stages of language development. For this activity you will have pre-read the article on language development, watched the video “Baby It’s You – Word of Mouth” and made notes about the key stages of language development in the Table provided. Discuss the key stages of language development.

The developmental stage	Age	Typical vocalisation and speech patterns. Give examples.	Explanation – why and how?
Pre-language communication	From birth 6-8 weeks 4-12 months <i>7-10 months</i> <i>9-12 months</i>		
First words	9-16 months From 10 months By 18 months		

Holophrases	10-18 months		
Telegraphic Speech	18-24 months		
Overgeneralisations	24 months – school age		
Sentences	2.5-3 years		

Activity 2. Cognitive development of infants and young children

There are many different theories of cognitive development in children. The article below describes one very well known framework for cognitive development, proposed by Piaget. It is important to note that different researchers put different timeframes on Piaget's proposed stages of development. This is because Piaget himself refined his theory many times over the course of his career, often changing the timing of different stages. It is also important to remember that there is much variability in individual children, so a child's age might not be a good indicator of the stage they have reached. For example, some children progress through the stages more quickly than the times listed below, while others will take longer. In clinical practice, it is often more important to focus on the order and key milestones of each stage, without focussing too much about the actual months/years. The timeframes may still be useful in helping clinicians to spot anything that is clearly outside the normal range.

Read the article below and answer the questions on cognitive development in children. This will be followed by video clips of cognitive development in children through interactions with their environment. Make notes of key points while the videos are playing for class discussion.

COGNITIVE DEVELOPMENT OF INFANTS AND YOUNG CHILDREN

Article by Clare Cunningham

By “cognitive” development we mean the development of “thinking”, or problem-solving behaviour. How and by what stages does an infant come, firstly, to an understanding of the nature of the world around him/her, and, eventually, to higher and abstract thinking? Clearly, this is more difficult to track and observe than motor or even language progress, especially in the pre-language stages of infancy.

One of the earliest and most influential researchers to examine this question was the Swiss psychologist, Jean Piaget, who studied the progression of thought, from infancy to adolescence, in the early years of the 20th Century. His work remains active today, as it is used in education and other areas.

Piaget showed:

1. That the child, almost from birth, is an active learner, who initiates actions to increase information.
2. That the child appreciates challenges and novelty, and in play, will challenge himself to add to information.
3. That there is a formal progression in the child’s understanding of the world, which relates to maturation of the child’s physical and neurological development and can be followed and tested at different stages.
4. That the child uses motor and language skills as they develop to further his/her understanding and problem-solving: Piaget theorized that the child actively “experiments” to acquire new information, which is then used to expand, modify or discard existing “hypotheses” on the nature of the world, and even formulate new ones (Piaget gave the name “schema” to these mental structures).

Piaget proposed **Stages** of cognitive development:

1. Sensorimotor stage: 0~30 months: the child learns about the environment by using motor, fine motor and sensory abilities to explore objects and the world around him.
2. Pre-operational stage: ~3-6 years: The child uses language and symbolic play to further understanding, but still relies on immediate perceptions; he/she shows “magical” thinking, i.e. posits unreal causes for events (e.g. the sun goes down because it is tired) and does not clearly distinguish fantasy from reality.
3. Concrete logical operations: ~6-10 years: the child now spontaneously distinguishes fantasy from reality, increasingly demonstrates knowledge of the “rules” of the physical world, can see many points of view and consider alternative explanations.
4. Formal logical operations: 11-12 years upwards: abstract thought, complex functioning, can reason logically, formulate and test hypotheses, thought no longer depends on concrete reality.

The Sensorimotor stage is further divided into phases:

1. **0-2 months:** emerging from reflex control: feeding, sleeping, but becoming visually aware of carers and environment; by 2 months has “special” response to carer, clearly distinguishing mother and father from other people.
2. **2-6 months:** active exploration of self and using that to reach out to the environment: watches own hands, wriggles hand, brings hands together and plays with fingers; then moves on to exploring other parts of body, begins to use hands to reach out, grasp and manipulate objects.
3. **6-12 months:** becomes more mobile: grasp refined to specialized index finger and thumb grasp: becomes interested in the ‘parts’ and detail of objects: e.g. explores wheels of toy car.

4. **12-18 months:** increasing knowledge of function of objects: pushes toy car along, uses pencil to mark paper, uses small toys on self; e.g. 'drinking' from toy cup
5. **18-24 months:** increasing language: symbolic play: uses toys on other toys: e.g. feeding small doll. Combines objects in many ways: stacking, building, containers and lids.
6. **~2-3 years:** language used to guide play; in spontaneous language demonstrates understanding of relative size (big and little) of gender, and of early number concepts: 'two', more. Enjoys increasingly complex spatial games: formboards and puzzles.

Object permanence

One of the most studied aspects of infant thought is the progression in the child's understanding that objects have an independent existence, even when they are out of sight. Almost all assessments of infant development include observations of this progression.

Initially, a baby, though she may look with interest at a bright object, will not react when the object disappears from sight. Between 2 and 3 months, the baby will continue to look intently at the hand of an observer after the observer has dropped the toy.

By 6 months, however, the baby looks to the floor for an object dropped from his own or another's grasp, though he will not search more extensively for it.

Between 6 and 12 months, there is a progression in the search made by the child for a toy hidden while he watches: at first, he will not lift a cloth placed over a toy, even when he has seen it placed, and is distressed by the 'disappearance' of the toy. At 8 or so months, he will discover it if it is only partly hidden. By 9 months, he will search for a toy completely hidden by another item (a cup), and by 12 months has no difficulty in finding a toy which he has seen hidden.

Between 21 and 24 months, the child has a much wider understanding of the permanence of objects, and will search for a favourite toy even if he has not seen where it was: thus he will look where he last had it (the bedroom floor), then where it is usually kept (the toy box) then more extensively if it is not there. Moreover, at this stage, the child delights in actively hiding objects himself, especially if he can see the adults anxiously searching for e.g. the car-keys; he delightedly reveals the hiding place.

Requirements for cognitive development:

1. Intact nervous system
2. Secure and loving attachment
3. Opportunities for safe exploration and experimentation

Although babies use their motor skills to explore the environment, these *cognitive progressions* can develop even in children with motor impairment: e.g. some children with cerebral palsy or the children who were affected by thalidomide. Delay in cognitive development may be caused by:

1. Genetic conditions which impair or limit neurological development: e.g. Down Syndrome, though even in such syndromes there is wide variation between individuals.
2. Neglect or abuse
3. Severe malnutrition in the first 2-3 years of life
4. Some metabolic or endocrine conditions: e.g. hypothyroidism.

For some of these conditions, catch-up in development may occur if the condition is recognized and remedied appropriately early enough. However, in some cases, even when treatment occurs and development progresses, subtle defects in learning and cognition may persist, with a significant effect on later learning and development.

Questions on cognitive development

1. What is cognitive development?
 2. What are the major underlying principles on which Piaget based his theory of cognitive development?
 3. What are the broad stages of cognitive development proposed by Piaget?
 4. During which stage are children most likely to find the game ‘peek-a-boo’ most fun and surprising?
 5. During which stage is a child able to play ‘make-believe’ and pretend that they are action heroes?
 6. During which stage is a child able to suspend belief in Santa Claus (while still enjoying the associated activities)?
 7. During which stage is a child capable of perceiving that a wide short cup has the same volume as a narrow tall cup?
 8. During which stage is a child able to work out that a rattle makes a noise when you shake it and will intentionally shake it in order to trigger the noise?
 9. During which stage is a child able to understand the concept of “moral shades of grey”?
 10. Do you think that all high school graduates have reached the stage of formal logical operations? (info from lecture)

11. What is object permanence?**12. What might cause a delay in cognitive development?****VIDEO: 'A child's world– Mind Games'**

Students should take notes as they watch the video specifically about “theory of mind” and then discuss the main points of the film clip.

VIDEO: Imaginary Friends: ABC Catalyst

- Did you or a sibling/ friend have an imaginary friend as a child?
- What are imaginary friends?
- How do imaginary friends relate to the Theory of Mind?

Activity 3. Preparation for SGS 5

In **SGS 5**, we will be looking at physical development of children and investigating the ‘My Personal Health Record’ (‘Blue Book’) that is given to all new parents by the NSW Health Department to monitor their new baby’s progress. If you have access to your own ‘Blue Book’ you may want to have this with you and share your own milestones.

Preparation for SGS 5: Watch the video “Reality Bites – Baby it’s you: First steps” [Available in Moodle, in the Scenario 2 learning materials for SGS5]

Scenario 2: Alex and William: Childhood development

Schedule

Refer to the eMed Timetable system and email updates sent to your UNSW email account for accurate times and locations.

Learning Activity	Principal Teacher
Scenario Plenary 2: Alex and William - Childhood development	Chuang, Sandra
Lecture 18: Physiology of GI secretion	Kovacevic, Zaklina
Science Practical 8: Group Project 2: Analysis Consultation	Ariff, Amir
Tutorial 1: Ethics tutorial 1	Langendyk, Vicki
Science Practical 9: Embryology of the face and ear	Mohammadiroushanbeh, Amaneh
Campus Clinical Skills Session 2: Mental Health Assessment	Spencer, Kalli
Lecture 19: Histology of the HP axis	Shirazi, Reza
Lecture 20: Hearing, hearing loss, impairment	Housley, Gary
Lecture 21: Pathogenesis of GIT infection	Zhang, Li
Lecture 22: Developmental delay	Sarkozy, Vanessa
Scenario Group Session 5: Normal motor development of children	Birzniece, Vita
Online Activity: Pre-prac activity: Anatomy of the ear and hearing	Byun, Christina
Science Practical 10: Anatomy of the ear and hearing	Byun, Christina
Online Activity: Post prac revision: Anatomy of the ear and hearing	Byun, Christina
Lecture 23: GIT infections of childhood	White, Peter
Lecture 24: Motility of the GI tract	Kovacevic, Zaklina
Lecture 25: Intellectual disability	Durvasula, Seeta
Science Practical 11: Common causes of diarrhoeal illness in children	White, Peter
Lecture 26: Aboriginal and Torres Strait Islander Child Health	Kong, Kelvin
Lecture 31: Treatment for GIT Infections	Liu, Lu
Scenario Group Session 6: Introduction to Psychosocial Aspects of Intellectual Disability	Birzniece, Vita
Science Practical 12: Group Project 3: Analysis Consultation	Ariff, Amir
Science Practical 13: Histology and pathology of the HP axis	Shirazi, Reza Tedla, Nicodemus
Online Activity: Post prac revision: Histology and pathology of the HP axis	Shirazi, Reza
Hospital Clinical Skills Session 2: Introduction to clinical paediatrics	Lowes, Luke
Lecture 28: Hormones of the HP axis	Lewis, Trevor
Lecture 29: Endocrine gland development	Shirazi, Reza

Note: This schedule is continued on the following page.

Learning Activity	Principal Teacher
Lecture 30: Steroid hormones	Birzniec, Vita
Lecture 31: Common infections in children	Bartlett, Adam
Tutorial 2: Anatomy Review Tutorial	Shirazi, Reza
Scenario Group Session 7: Approaches to improving the health of Indigenous children, with a focus on otitis media	Birzniec, Vita
Lecture 32: Gene Therapy	Ly, Lana
Lecture 33: Group Project: Data Interpretation and Discussion	Ariff, Amir
Science Practical 14: Gene therapy	Ly, Lana
Online Activity: Post prac revision: Gene Therapy	Ly, Lana
Online Q&A and Content Recap Session 2	Birzniec, Vita Spencer, Kalli Chau, Patrick
Lecture 34: Structure and function of the thyroid	Lewis, Trevor
Lecture 35: Treatment of thyroid disorders	Le Nedelec, Marty
Tutorial 3: Gastrointestinal tract physiology	Kovacevic, Zaklina
Science Practical 15: Group Project 4: Analysis Consultation	Ariff, Amir
Scenario Group Session 8: Endocrine System	Birzniec, Vita
Campus Clinical Skills Session 3: Interaction with SPs - Mental Health Assessment	Spencer, Kalli
Lecture 36: Female/Male reproductive puberty physiology	Gibson, Karen
Lecture 37: Embryology: sexual differentiation	Shirazi, Reza
Lecture 38: Sex, Gender, and Identity	Catterall, Daisy
Lecture 39: Ethics of puberty-blockers in young adolescents with Gender Dysphoria	Langendyk, Vicki
Tutorial 4: Endocrine Physiology	Lewis, Trevor
Scenario Group Session 9: Exploring sexual development	Birzniec, Vita
Lecture 40: Clinical genetics	Palmer, Emma
Lecture 41: Complex Inheritance and Gene Mapping	Waters, Paul
Science Practical 16: Thyroid gland physiology, online activity and Q&A	Lewis, Trevor
Lecture 42: Transgender Healthcare	Gleeson, Martina

Note: This schedule is subject to change. It only shows the first instance of any one activity. Refer to the eMed Timetable system and email updates sent to your UNSW email account for accurate times and locations.

Overview

Aims:

To develop an understanding of:

- Normal motor development and behaviour in 1- 5 year age group.
- The detection and impact of developmental delay.
- Intellectual disability.
- Socio-cultural influences on normal development and health.
- Common childhood infections; including viral GIT infections.
- Clinical genetics.
- The endocrine system and sexual development.

Key concepts:

- Normal motor development and detection and causes for delay.
- Causes of speech delay – hearing, neurological, anatomical.
- Otitis media.
- ‘The Early Years’ of Aboriginal and Torres Strait Islander children’s health.
- Psychosocial issues of living with intellectual disability.
- Genetic influences on health and development.
- Endocrine system- development, homeostasis, and effect on health.

In this middle scenario you are going to learn about two young boys who were born a few weeks apart and who at face value are very similar in their acute health issues. However, you will find out that they are growing and developing very differently. You will also meet a young boy of same age who is the son of a close family friend.

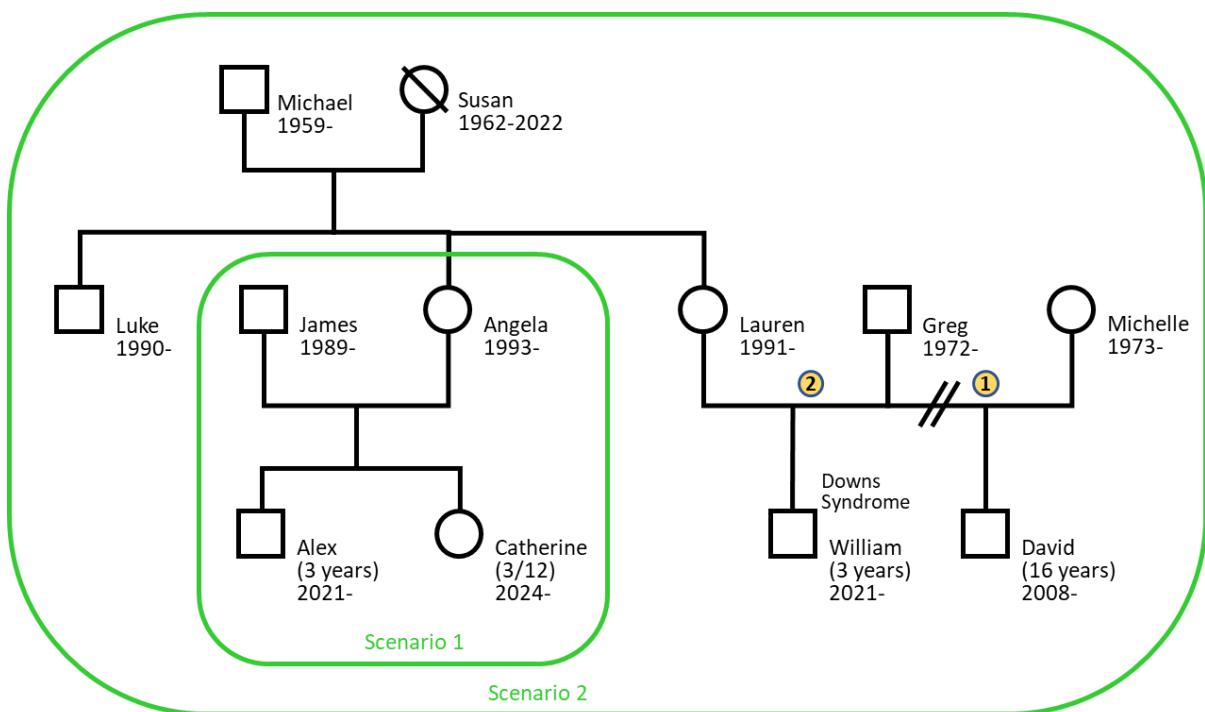
We met 3-year-old Alex with his younger sister Catherine in the first scenario. He is back at the doctor with a history of fever and pulling at his right ear associated with a runny nose and a moist cough, especially at night. He has had three episodes of otitis media in 3 months. He was previously toilet trained during the day, but has recently been wetting his pants, without telling his mother until she discovers his wet clothing.

Alex has a cousin called William who is also 3 years old; their mothers are sisters. William has Down syndrome, which was diagnosed at birth. William has recurrent ear infections like Alex and also had a bout of pneumonia last year probably exacerbated by a mild congenital heart defect that makes him more susceptible to chest infections. His immunisations are up to date and he eats well. He has regular paediatric review with his paediatrician including screening for other conditions he might be susceptible to due to his Down syndrome, such as autoimmune hypothyroidism and growth hormone deficiency.

William’s mother is also visiting the doctor as she is concerned that William does not speak much, and mainly indicates his needs by gestures and single words. His mother also notes that he has developed difficult behaviours such as scratching and kicking recently. He is not fully toilet trained as yet but his mother is continuing to encourage him to use a potty. William lives with his parents and an older stepbrother David who is 16 years old and attending the local high school.

Isaac is 3 years old and the son of a family friend of Alex and William’s mothers. He has autism, which was diagnosed just after his second birthday. Isaac was born at full-term with no complications during pregnancy or delivery. Isaac’s mum reported that he has been healthy with normal motor development (sitting, standing and walking) but he does not respond to his name or join in any play or social interactions. His communication has been delayed and even at age 3, he has not developed any words. He has regular paediatric review as he has behavioural and sleep difficulties and is receiving early intervention for speech and social skills.

Genogram for Scenario 2



□ = male

○ = female

◎ = deceased female

// = separated

You will be learning more about the main health and other underlying issues for William and Alex and their families by introducing you to normal childhood development, the socio-cultural and health determinants that affect growth and learning and how healthcare workers can monitor and support this stage of life.

SGS 5 - Normal motor development of children

Aims:

- To identify the order of developmental milestones in motor development of children from birth to 5 years.
- To identify ages at which children should be screened for possible developmental delay in gross motor, fine motor, language, cognitive and social domains.
- To identify factors that might interfere with the achievement of the developmental milestones at expected timeframes.

Key concepts:

- Normal motor development.
- Developmental milestones.
- First steps.

Resources needed:

- Video clip: "An Infant Well-Child Visit at Harvard Vanguard Medical Associates" on YouTube:
<https://www.youtube.com/watch?v=yedMu9C70m4>
[Link also available on Moodle in the Scenario 2 learning materials for SG5]
- Milestones quiz (online version on Moodle SG5)
- My Personal Health Record ('Blue Book'), 2023 edition, electronic copy available at
<https://www.health.nsw.gov.au/kidsfamilies/MCFhealth/Publications/blue-book.pdf>

Process:

- | |
|--|
| 1. Explore the scenario plenary and interview clip and identify key issues |
| 2. Milestone quiz with PowerPoint answers |
| 3. Screening for normal development |
| 4. Factors that impact on the milestones being achieved |
| 5. Assignments and projects. Preparation for SGS 6 and 7 |

Activity 1. Explore the scenario 2 plenary and interview clip and identify key issues

What are the main issues raised by the scenario video and in the plenary? How do these link to the learning activities in this scenario?

Activity 2. Motor Milestones Quiz

Students will work in groups of approx. 3 to complete this activity by placing the motor milestones in the expected chronological **order**; from the more simple to the more complex motor activity (Scenario 2, SG5). As you place the milestone cards in order, consider what is physically needed (in terms of strength or control) for a child to develop and hence achieve the milestone. Consider also the general pattern of motor milestone development (e.g. Cephalic to Caudal and Proximal to Distal).

Activity 3. Screening for normal development

A. Well Child Visit Video

Watch the “An Infant Well-Child Visit at Harvard Vanguard Medical Associates” video. This video is an example of how a paediatrician approaches examining a baby and gives an overview of the clinical exam of a baby.

Resource: <https://www.youtube.com/watch?v=yedMu9C70m4> (running time 5:00 minutes)

B. Purpose of screening

Working as a group, discuss the following questions to develop an understanding of the benefits of the Blue Book.

1. Reasons for screening for normal development. WHY is this done?
 2. What are the advantages or disadvantages of diagnosing William with Down Syndrome early (prior to birth or soon after birth)?
 3. What is the purpose of the *My Development* section of the Blue Book?
 4. What is the benefit of the *Additional Questions for Parents/Carers* section of the Blue Book?
 5. What is the general outline/structure of the Child Health Check section of the Blue Book?

C. Personal Health Record ('Blue Book') screening questions and tests – mini cases

Students will form into three groups, with each group allocated one of the cases below. In your group, first read the case and identify if there are any concerns with development. Use the relevant health check in the Blue Book ("My Personal Health Record" 2023 edition; link to the PDF from NSW Health is on Moodle SGS5) to determine if the child has reached the developmental milestones expected for their age. Discuss in your group any other concerns you have with your case. Prepare a brief summary of the case and your findings in the document available on Teams to share with the other students in the SG.

CASE 1 – Catherine, 3 months

Although Catherine is currently 3 months of age, one month ago, Catherine (from the scenario) attended the GP for her 8-week health check. James (Catherine's father) expressed concern that Catherine is not developing as quickly as Alex at this age. Catherine is not yet babbling or stringing several sounds together and is only making gurgling noises. Catherine's grandmother was worried about Catherine's hearing, however her parents have noticed that Catherine turns her head in response to loud noise.

Both parents have noticed that Catherine seems to be starting to focus her gaze and has recently started smiling in response to her mother's face. Angela (Catherine's mother) also mentions that Catherine seems to recognise her when she enters the room and her eyes follow her movements.

Catherine has not yet rolled over but holds her head up off the bed and is able to turn her head from one side to another when placed on her stomach. Her arm and leg movements are clumsy and not task orientated. Catherine often sucks on the side of her hand.

Catherine is being breastfed, but Angela wants to switch to formula soon as it is more convenient.

Catherine's eye examination (observation, corneal light reflection, fixation, response to looking with one eye and eye movements) were normal, as were her cardiovascular and hip examinations. Catherine's weight and length were plotted on the appropriate growth charts, with both values sitting between the 10th and 25th percentile. After seeing these results, Catherine's parents expressed concerns that their daughter is not growing enough and ask if Catherine needs nutritional supplements to help boost her growth.

Name/ Age	Developmental domains	Presentation (based on carer's report)	Comments
Catherine 2 months	Gross motor		
	Fine motor		
	Language (receptive)		
	Language (expressive)		
	Cognitive		
	Social/ emotional		
	Others		

CASE 2 – Ben, 12 months

Ben is at the GP for his 12-month health check. Ben is an only child. His parents start by explaining that he is still overly attached to them and gets very distraught whenever separated. He refuses to make eye contact or interact with anyone who is a stranger. Ben is very nervous and cries whenever he is put in a situation unfamiliar to him.

Ben has started talking but only uses the 2 words “mama” and “dada” and also “uh-oh”. He sometimes tries to imitate words he hears his parents say but gives up easily. Ben’s parents have tried repeating single words over and over to him hoping that he will attempt to imitate the sound. They state that he shows a lack of interest and is yet to attempt any further words. Ben uses gestures to express himself, shaking his head when he does not want to do something and pointing to his parents when he wants something. Ben does show signs of frustration with screaming fits occasionally when his parents do not understand his gestures.

Ben will play independently but only when his parents are within eyesight. If he cannot see them he often starts crying. Ben is able to follow simple directions and has recently started pointing to objects with his index finger. He enjoys simple games like peekaboo with his parents but refuses to play with his grandparents.

Ben has shown little interest in walking. He will remain standing if put in the position and can hold onto a parent. Any attempt to turn this into walking results in Ben immediately folding his legs and sitting on the floor. He crawls everywhere he wants to go.

Ben’s eye examination (observation, corneal light reflection, fixation, response to looking with one eye and eye movements) were normal and his weight and height are around the 25th percentile on the growth charts. His left testicle has descended but not the right.

Name/ Age	Developmental domains	Presentation (based on carer's report)	Comments
Ben 12 months	Gross motor		
	Fine motor		
	Language (receptive)		
	Language (expressive)		
	Cognitive		
	Social/ emotional		
	Others		

CASE 3 – Alex, 3 years

Alex (from the scenario) and his parents visit their GP for Alex's three-year health check. Both parents have noticed significant developments since Alex's previous health check. Alex did not play well with other children and refused to share any of his toys. Now he has two good friends who he plays with frequently without any fighting. Alex's speech has developed so he is now almost speaking in whole sentences. Alex's grandparents have difficulty understanding the words he is saying and require translation by his parents. He also has some difficulty expressing himself to his friends and gets very frustrated sometimes. Alex is able to understand simple instructions but gets confused if more than one instruction is given at any one time. He is able to dress himself if his clothes are laid out. He can feed himself with a spoon but cannot use a knife with fork.

Alex has a vivid imagination and is able to play by himself for extended periods. He enjoys his parents reading books to him and is able to point and identify simple objects in these books.

Alex is a very physically active boy who enjoys playing in the sandpit, simple ball sports and has recently learnt to ride his tricycle without help from his parents. Alex is affectionate towards his parents and sister, but gets frustrated when his sister cries and often shouts at her to stop.

Alex's eye tests (observation, corneal light reflection, fixation, response to looking with one eye and eye movements) were normal and his weight and height are around the 50th percentile on the growth charts.

Name/ Age	Developmental domains	Presentation (based on carer's report)	Comments
Alex 3 years	Gross motor		
	Fine motor		
	Language (receptive)		
	Language (expressive)		
	Cognitive /Self help		
	Social/ emotional		

Activity 4. Factors that may impact on whether a child achieves his / her milestones

Child Age	Causes
Prenatal	
Perinatal	
Post-natal	
Environment	

Activity 5. Preparation for SGS 6 and 7

Audiology case presentations for SG 7:

In SGS 7 students will have to deliver a 10 minute presentation on audiology.

Divide into 3 groups. Each group will be allocated one set of questions on hearing and hearing loss.

Research and answer the given questions and prepare a presentation for the group in SGS 7. Students should be prepared to present formally to the group using slides.

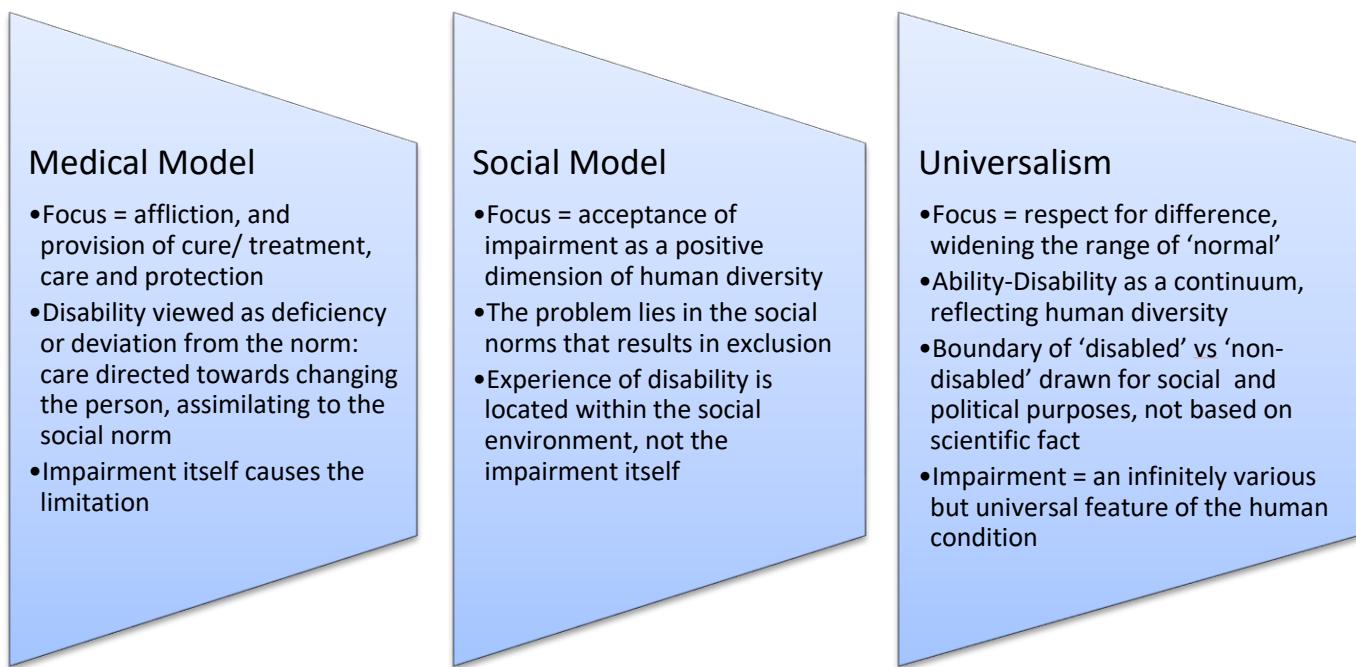
Pre-class reading for SGS 6 activity on “Psychosocial Aspects of Intellectual Disability”

In SGS 6 you will examine the experiences of someone with an intellectual disability across their lifespan. Please familiarise yourself with the Learning Objectives and Article 25 of the UN Convention on the Rights of Persons with Disabilities (next page) in advance, as this will help you get the most out of the session.

Pre-class reading for SGS 6 - Psychosocial Aspects of Intellectual Disability

Learning Objectives

1. Students will reflect on and question their own underlying beliefs and attitudes about intellectual disability and people with intellectual disabilities
2. Students will reflect on the social status of people with intellectual disabilities, underlying social beliefs and attitudes about intellectual disability and people with intellectual disabilities, and gain a deeper understanding of how these impact on people with intellectual disabilities and their carers and families. The 'social beliefs and attitudes' are those attitudes held by many people, and which pervade public / media portrayal of, and attention given to intellectual disability. It is also how government and corporate policies respond to and affect people with intellectual disabilities – e.g. when developing all kinds of public infrastructure and services, from health services, public transport systems, financial products and services, etc.
3. Students will reflect on the change in conceptualisation of intellectual disability from the Medical Model to the Social Model and Universalism:



4. Students will reflect on and gain a deeper understanding of the diversity of intellectual disability and people with intellectual disabilities – in cognitive ability, in adaptive functioning, in experiences, interests and preferences, personality, associated health risks, communication ability and needs, and physical abilities.

Article 25 of the UN Convention on the Rights of Persons with Disabilities

<https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities/article-25-health.html>

ARTICLE 25 – HEALTH

States Parties recognize that persons with disabilities have the right to the enjoyment of the highest attainable standard of health without discrimination on the basis of disability. States Parties shall take all appropriate measures to ensure access for persons with disabilities to health services that are gender sensitive, including health-related rehabilitation. In particular, States Parties shall:

- (a) Provide persons with disabilities with the same range, quality and standard of free or affordable health care and programmes as provided other persons, including in the area of sexual and reproductive health and population-based public health programmes;

- (b) Provide those health services needed by persons with disabilities specifically because of their disabilities, including early identification and intervention as appropriate, and services designed to minimize and prevent further disabilities, including among children and the elderly;
- (c) Provide these health services as close as possible to people's own communities, including in rural areas;
- (d) Require health professionals to provide care of the same quality to persons with disabilities as to others, including on the basis of free and informed consent by, inter alia, raising awareness of the human rights, dignity, autonomy and needs of persons with disabilities through training and the promulgation of ethical standards for public and private health care;
- (e) Prohibit discrimination against persons with disabilities in the provision of health insurance, and life insurance where such insurance is permitted by national law, which shall be provided in a fair and reasonable manner;
- (f) Prevent discriminatory denial of health care or health services or food and fluids based on disability.

An additional resource may also be read in preparation for SGS 6:

- Bickenbach, J., Chatterji, S., Badley, E., & Ustun, T. (1999). Models of disablement, universalism and the international classification of impairments, disabilities and handicaps. *Social Science & Medicine*, 48 (9), 1173–1187.
https://unsw.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60708474810001731?auth=SA_ML

SGS 6 - Introduction to Psychosocial Aspects of Intellectual Disability

Aims:

- Help students to understand the context of normal childhood development and factors that may impact on childhood development;
- Introduce the concept of growing up with an intellectual disability and the socio-cultural impact of this.

Key concepts:

- Intellectual disability
- Education
- Social and health support for families with a child with an intellectual disability

Resources:

- Student pre-reading from guide.
- “Ten things people with Down syndrome would like you to know”, published by Down Syndrome NSW [Link available on Moodle in the Scenario 2 learning materials for SGS6],
https://www.youtube.com/watch?v=tDjnNDRP_2o
- Autism Spectrum Australia, <https://www.autismspectrum.org.au/>
- Autism Spectrum Disorder, <https://www.cdc.gov/ncbddd/autism/index.html>
- Autism Awareness Australia, <https://www.autismawareness.com.au/>
- <https://raisingchildren.net.au/autism/behaviour/understanding-behaviour/challenging-behaviour-asd>
- <https://www.cdc.gov/ncbddd/autism/autism-spectrum-disorder-in-teenagers-adults.html>
- <https://swalcliffepark.co.uk/what-is-quality-of-life/>
- Down Syndrome Australia, <https://www.downsyndrome.org.au/>

Key references:

Bickenbach, J., Chatterji, S., Badley, E., & Ustun, T. (1999). Models of disablement, universalism and the international classification of impairments, disabilities and handicaps. *Social Science & Medicine*, 48 (9), 1173–1187.

https://unsw.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60708474810001731?auth=SAML

Process:

1. Introduction to intellectual disability
2. Introduction to Isaac
3. Psychosocial aspects of intellectual disability
4. Preparation for SGS 7

Activity 1. Introduction to intellectual disability

Refer to the Learning Objectives of this session (pre-reading for this class) and read William’s scenario again. Then,

- explore your own attitudes towards people with intellectual disabilities;
- explore society’s attitudes towards people with intellectual disabilities and reflect on how this affects the lives and experiences of people with intellectual disabilities;
- reflect on the diversity of intellectual disability, and of people with intellectual disabilities;
- reflect on the changing framework that guides our understanding of intellectual disability, from the medical model to the social model and universalism.

Activity 2. Introduction to Isaac

Refer to scenario to discuss who is Isaac.

You will also watch a telehealth consultation with Dr Yvette Vella.

Activity 3. Psychosocial Aspects of Intellectual Disability

A. Small Group Work

Students will work in four groups, with each group focusing on a different phase of William's and Isaac's life (from the scenario). Each group has a set of questions to address. Work collaboratively in your groups to address the questions as best you can, taking notes as you go on the shared document in Teams. Each group will present their responses to the rest of the scenario group. You may either nominate a spokesperson or allocate a question to a different group member for presenting. Some questions will require research.

- Group 1: Baby/child – adolescent (0-12 years) with Down syndrome
- Group 2: Adolescent – young adult (12 – 20 years) with Down syndrome
- Group 3: Baby/child – adolescent (0-12 years) with autism
- Group 4: Adolescent – young adult (12 – 20 years) with autism

B. Reporting back to the group

Provide a brief outline of the information gathered in response to the questions associated with the phase of life you were investigating. Include your answers on the shared document on Teams.

Group 1: Baby/child – adolescent (0-12 years)

When would William's Down syndrome have been discovered?

List some of the possible expectations that William's parents may have had that have been affected by his diagnoses of DS and consider the influence of social or cultural factors on these?

What must the family consider in order to help them to adjust and manage their needs and those of their child?

How might these things be difficult?

What are some of the positives that could emerge for the family?

William's speech is delayed. Why?

Why might this be of concern to William's mother and what would you advise?

Would you expect that William can achieve toilet training? How might it be different from other children?

Why is it important to assess William's development early, and which areas of William's development should be assessed?

What are possible reasons for the problem behaviour?

Group 2: Adolescent – young adult (12 – 20 years)

Would someone with Down syndrome or another intellectual disability go to high school? What factors might influence this?

How would William's experience of adolescence be similar/different to his non-disabled peers'?

Can someone with ID drive/get a driver's licence? Why/why not? If you think it is possible, what factors would affect the situation? Can someone with ID register to vote? Can someone with ID vote? Why/why not?

Would a young person with DS or an ID become interested in relating to someone else sexually? Is someone with an intellectual disability able to have a romantic relationship?

Do young people with DS or ID need information about sex, relationships, birth control and STIs? What kind of information and support might they need?

What are some of the potential sources of frustration for a young person with ID/DS who wants to relate sexually to another person?

Group 3: Baby/child – adolescent (0-12 years) with autism**When would Isaac's diagnosis of autism become evident?****List some of the impacts of autism on caregivers/parents, siblings and other close support networks?****How can Isaac's family be supported?****Isaac is showing behavioural difficulties. What are the common co-occurring issues?****What are possible reasons for the behavioural difficulties?****Why might this be of concern to Isaac's parents and what would you advise?****What are some of the positives that could emerge for the family?**

Why is it important to assess Isaac's development early?

Group 4: Adolescent – young adult (12 – 20 years) with autism

Would someone on the autism spectrum pursue educational and career goals? What factors might influence this?

How would Isaac's experience of adolescence be similar/different to his non-disabled peers'?

How can someone on the autism spectrum be supported to have good quality of life? What factors would contribute to good quality of life?

Would a young person with autism have different experiences and challenges based on their gender?

What are some of the unique challenges faced by adolescents on the spectrum?

C. Intellectual disability across ages

Why are people with intellectual disabilities less likely to make healthy lifestyle choices and more likely to suffer from poor health?

Why do people with intellectual disabilities have a lower life expectancy?

Consider William at 45 years of age. He has been living at home and is cared for by his mother and her new husband. His mother and stepfather are in their 70s and 80s. What are the challenges the family may be facing at this stage?

D. Large group closing discussion

Discuss 1: What do people with ID expect from their doctor?

Discuss 2: How can medical practitioners incorporate patient centred approach in their practice with patients with an intellectual disability?

Activity 4. Preparation for SGS 7

In the next SG students will present on audiology and will look at additional audiograms and discuss some audiology cases. Students will need access to their notes taken during today's SGS.

SGS 7 - Improving the health of Aboriginal and Torres Strait Islander children, with a focus on otitis media

Aims:

- Understand the concepts of a conductive and sensorineural hearing loss and the features of each;
- Learn about the different types of otitis media and the signs, symptoms and treatment of each;
- Understand why children are particularly prone to middle ear infection;
- Understand the basic concept of an audiogram and the difference between air conduction and bone conduction.
- Review examples of audiograms.
- Identify and explore social determinants of health impacting on Aboriginal and Torres Strait Islander peoples' perinatal health and the early years.
- Describe some approaches to improving the health of Aboriginal and Torres Strait Islanders children, with a focus on otitis media.

Key concepts:

- Audiograms
- Air conduction
- Bone conduction
- Conductive hearing loss
- Sensorineural hearing loss
- Otitis media
- Glue ear
- Social Determinants of Health
- Evidence-based medicine

Resources:

1. Care for Kids' Ears <https://www.health.gov.au/initiatives-and-programs/care-for-kids-ears>
2. Burns, J. and Thomson, N. (2013). Review of ear health and hearing among Indigenous Australians. <https://healthinfonet.ecu.edu.au/learn/health-topics/ear-health/publications/?id=26142&title=Review+of+ear+health+and+hearing+among+Indigenous+Australia>
3. Australian Institute of Health and Welfare (2022). Profile of Indigenous Australians. Retrieved from <https://www.aihw.gov.au/reports/australias-health/profile-of-indigenous-australians>
4. Australian Institute of Health and Welfare. (2022). *Indigenous hearing health*. Retrieved from <https://www.aihw.gov.au/reports/indigenous-australians/ear-and-hearing-health-of-aboriginal-torres-strait/summary>
5. Australian Institute of Health and Welfare (2018). Ear health and hearing loss among Indigenous children. Australia's Health 2018. Retrieved from <https://www.aihw.gov.au/getmedia/12c11184-0c0a-43ad-8386-975c42c38105/aihw-aus-221-chapter-6-4.pdf.aspx>
6. Kong K, Lannigan FJ, Morris P.S., et al. (2017). Ear, nose and throat surgery: All you need to know about the surgical approach to the management of middle-ear effusions in Australian Indigenous and non-Indigenous children. *Journal of Paediatric Child Health* 53(11):1060-1064. [Available via UNSW Library]
7. Munns, A., & Robson, K. (2019), 'The Early years', in Biles B; Biles J (ed.), *Aboriginal & Torres Strait Islander Peoples' Health and Wellbeing*, Oxford University Press Australia and New Zealand, Melbourne. [Available via UNSW Library]

Process:

1. Audiology group presentations
2. Hearing loss cases
3. Otitis media – focus on Aboriginal and Torres Strait Islander children
4. Evidence for use of grommets
5. Reminder for SGS 8

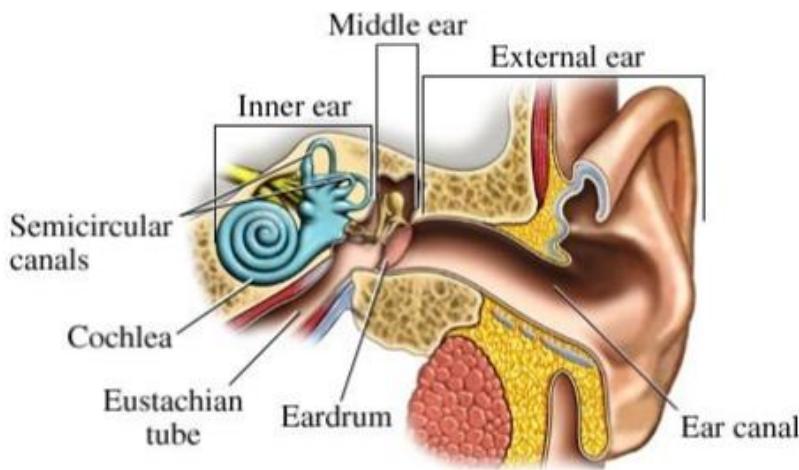
Activity 1. Audiology Group Presentations

Figure showing key structures of the ear. Source: Nucleus Medical Media, Inc.

Note: Eustachian tube has more than one name – in Anatomy it is labelled auditory tube.

Group 1 presentation:

a. **What is a conductive hearing loss? Describe some common examples of conductive hearing loss.**

b. **What is a sensorineural hearing loss? Describe some common examples of a sensorineural hearing loss.**

c. **What is a mixed hearing loss?**

Group 2 presentation:

- a. Why may hearing be affected by a cold or congestion due to a cold/flu? Look at the diagram of the ear above.

 - b. What is otitis media? Differentiate between acute otitis media, chronic otitis media and otitis media with effusion (OME or glue ear). Give the contributing risk factors, the signs and symptoms and treatment of each.

Acute otitis media
Contributing risk factors:
Symptoms and signs:
Treatment options:
Chronic otitis media (COM)
Contributing risk factors:
Symptoms and signs:

Treatment options:

Otitis media with effusion (OME) / Glue ear

Contributing risk factors:

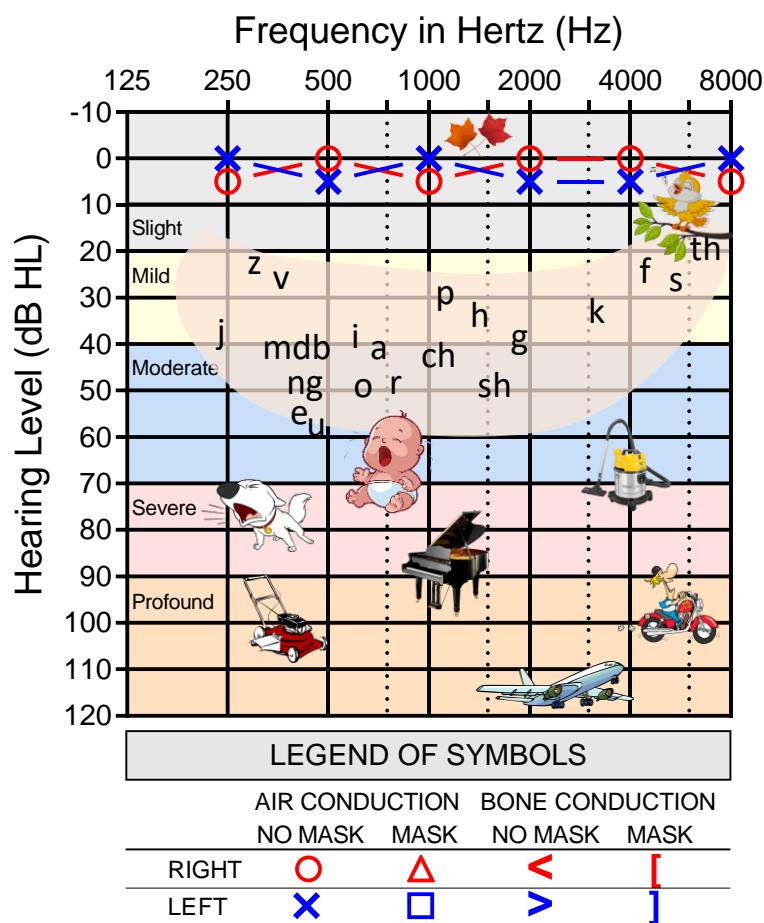
Symptoms and signs:

Treatment options:

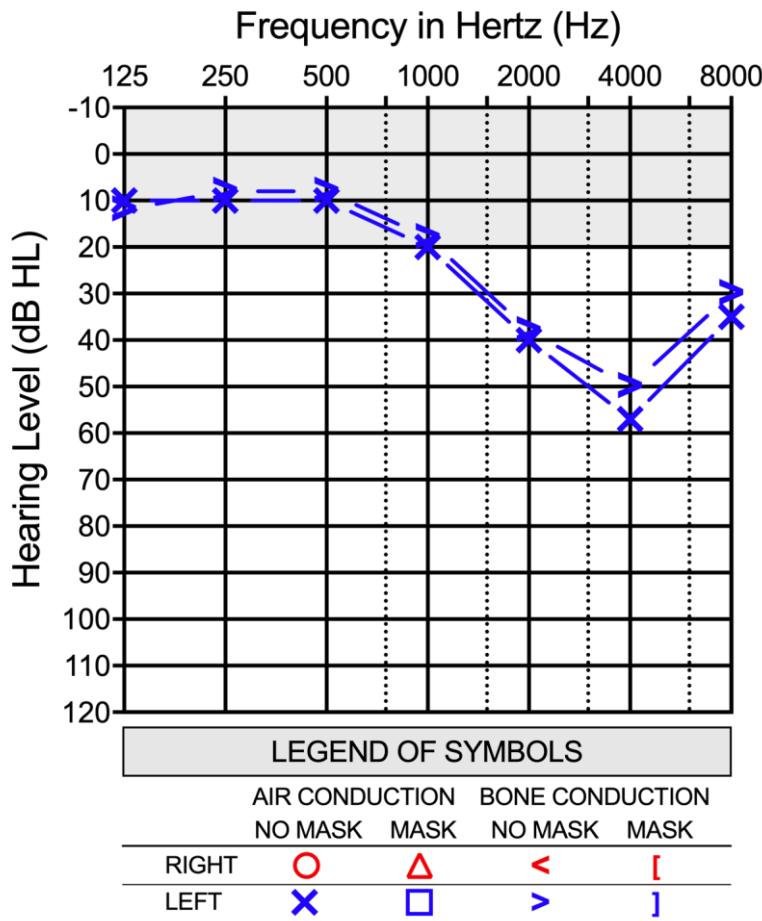
- c. Why do you think children get more middle ear infections than adults?

Group 3 presentation:

- a. What is an audiogram and how do you read it?

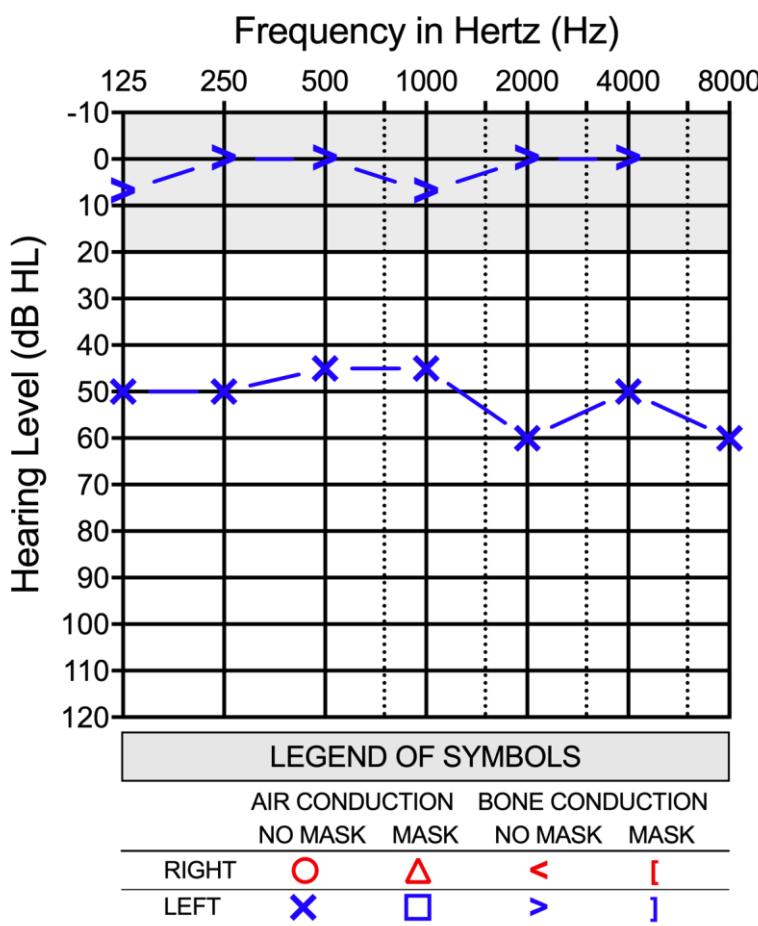


- b. What is the difference between air conduction (AC) and bone conduction (BC)?

Activity 2. Examples of hearing loss**CASE 1:**

An audiogram of a 60 year old male who has worked with noisy machinery for 25 years. Results from the right ear are not shown but look similar.

What might be difficult for a person with this type of hearing loss?

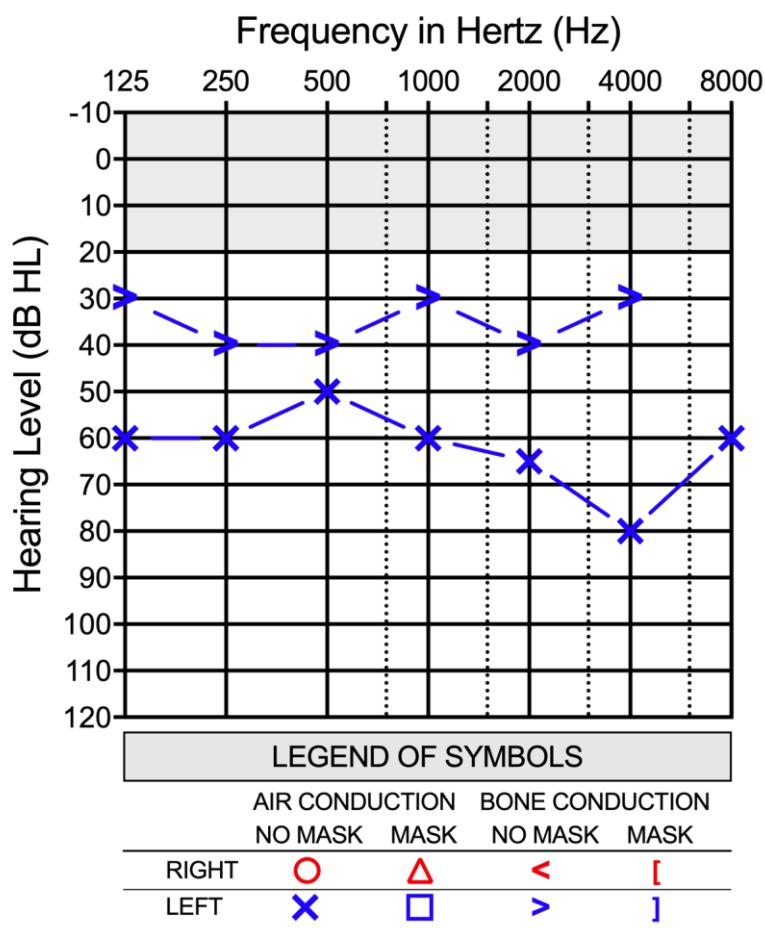
CASE 2:

Results for the left ear are shown; right ear not shown but is very similar. This is an audiogram of a 7-year-old Aboriginal girl (Sarah) living in Walgett NSW, with acute upper respiratory tract infection.

She has bilateral otitis media as a result of the acute upper respiratory tract infection and so has moderate conductive hearing loss in both ears, shown on the audiogram as reduced air conduction but normal bone conduction.

Sarah attends the local school and has shown good progress at school up until recent times.

What issues in hearing may arise for Sarah in school and at home?

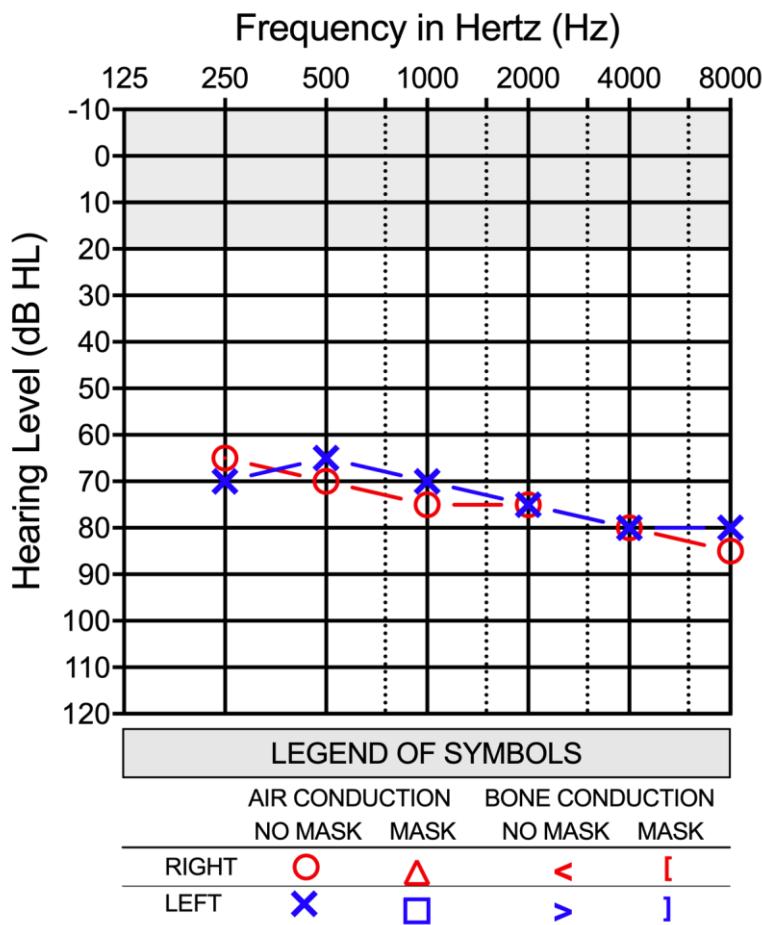
CASE 3:

This audiogram shows a mixed hearing loss - this can occur when a person has a permanent sensori-neural hearing loss and then also develops a temporary conductive hearing loss. Tom is a 10-year-old born with a mild hearing loss. When in class he always sits near the front so he can hear his teacher well if there is not too much background noise. He copes well and does not wear any hearing aids. Whenever he gets an URTI, his hearing is affected (more frequently in the left ear). This audiogram was taken when he was ill.

The audiogram for the right ear (not shown) indicates bone conduction is similar to that seen here in the left ear and the right ear has no difference between air conduction and bone conduction.

How could you describe the hearing in the right ear?

What hearing difficulties would this person experience?

CASE 4:

The audiogram here is from an 8-year-old girl called Jessica and shows a severe sensorineural hearing loss. Bone conduction is not shown here but would show a similar amount of hearing loss. Jessica was born with this hearing loss as a result of her mother being exposed to CMV during pregnancy.

What difficulties would this audiogram pose for the child?

Explanation of “Masking”

Masking is used to ensure that you are testing only one ear at a time. Masking presents a constant noise to the non-test ear to prevent crossover from the test ear. When a signal is presented to the test ear, the signal may also travel through the head and reach the cochlea on the other side. However, the intensity of the signal from the test to the non-test ear can be reduced by the mass of the head. This signal reduction is called inter-aural attenuation. For bone conduction, the inter-aural attenuation may be as low as 0 dB because the bones of the skull are very efficient at transmitting sound. Thus, any suspected difference in bone conduction between the test and non-test ears requires masking. Inter-aural attenuation for air conduction can range between 40 and 80 dB. Masking should be used if the difference in air conduction in one ear and bone conduction in the other ear is 40 dB or greater. Thresholds obtained with masking in the contralateral ear are called masked thresholds and should represent the true threshold of the test ear.

Activity 3. Otitis Media – focus on Aboriginal and Torres Strait Islander children

A. Overview of Aboriginal and Torres Strait Islander health status

Australian Indigenous HealthInfoNet (2020). *Overview of Aboriginal and Torres Strait Islander health status 2020*. Perth: Australian Indigenous HealthInfoNet. Retrieved from:

https://healthinfonet.ecu.edu.au/healthinfonet/getContent.php?linkid=659895&title=Overview+of+Aboriginal+and+Torres+Strait+Islander+health+status+2020&contentid=42435_1

Where do most Indigenous Australians live?

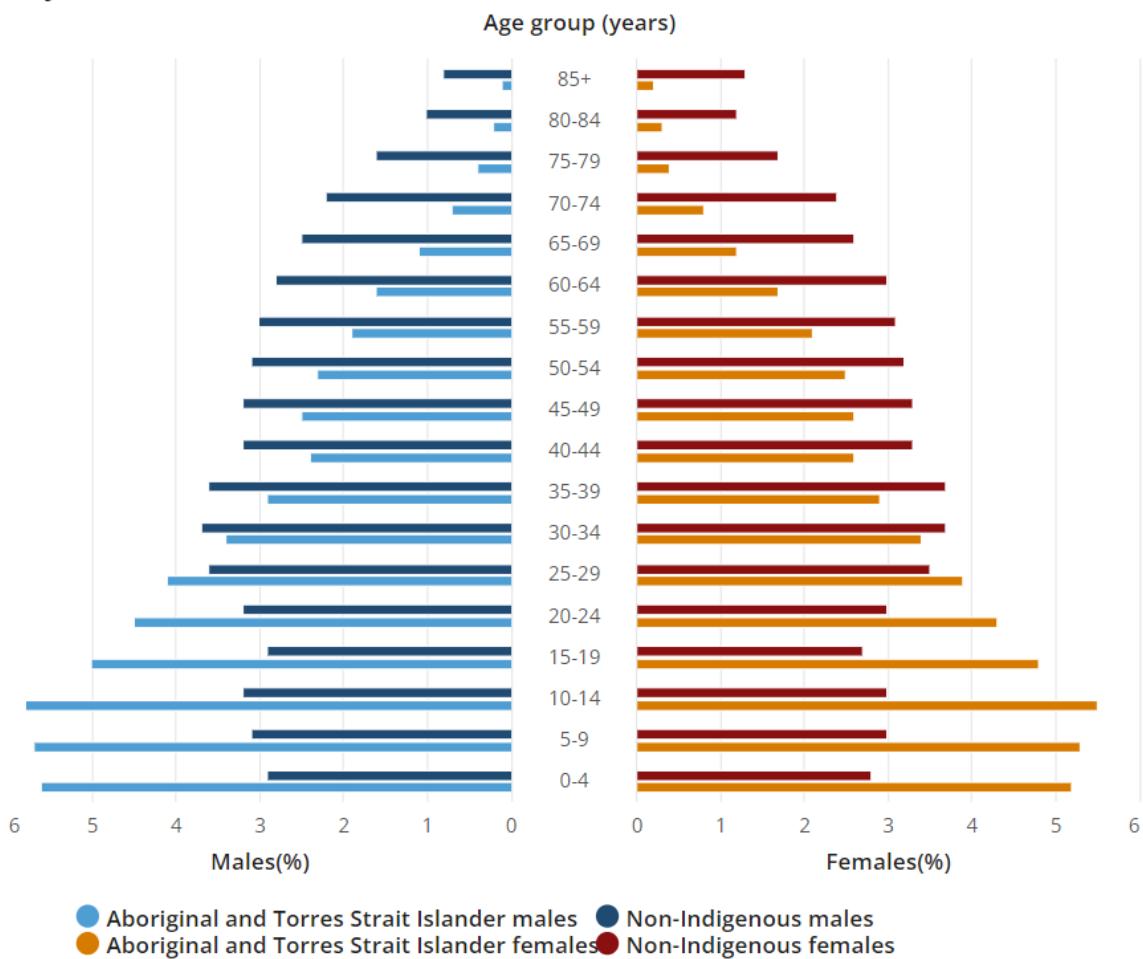
Estimated Aboriginal and Torres Strait Islander population by jurisdiction in Australia, 2021

Jurisdiction	Number of Aboriginal and Torres Strait Islander people	Proportion of total Aboriginal and Torres Strait Islander population (%)	Proportion of jurisdiction population (%)
NSW	278,043	34.2	3.4
Qld	237,303	29.2	4.6
WA	88,693	10.9	3.3
NT	61,115	7.5	26.3
Vic	65,646	8.1	1.0
SA	42,562	5.2	2.4
Tas	30,186	3.7	5.4
ACT	8,949	1.1	2.0
Australia	812,728	100.0	3.2

Source: Australian Bureau of Statistics. (2021). Aboriginal and Torres Strait Islander people by state and territory(a) <https://www.abs.gov.au/articles/australia-aboriginal-and-torres-strait-islander-population-summary>

Looking at the population pyramid, what are the major differences between Aboriginal and Torres Strait Islander population and non-Indigenous populations depicted?

Aboriginal and Torres Strait Islander and non-Indigenous populations by age groups – 30 June 2021



Source: Derived from Australian Bureau of Statistics. (2021, June 30). *Estimates of Aboriginal and Torres Strait Islander Australians*. ABS. <https://www.abs.gov.au/statistics/people/aboriginal-and-torres-strait-islander-peoples/estimates-aboriginal-and-torres-strait-islander-australians/latest-release>.

- The Aboriginal and Torres Strait Islander population is much younger overall than the non-Indigenous population. According to ABS estimates, about one-third (33%) of Aboriginal and Torres Strait Islander people were aged less than 15 years, compared with 18% of non-Indigenous people. About 5.2% of Aboriginal and Torres Strait Islander people were aged 65 years or over, compared with 17% of non-Indigenous people.

What are the implications of this data?

B. Otitis Media in Aboriginal and Torres Strait Islander children

We know that OM is far more common for Aboriginal and Torres Strait Islander children compared to the rest of the population and the next activity aims to understand the reasons for this and the consequences for children suffering with OM. Each group should research and discuss the following questions.

Resources:

Australian Institute of Health and Welfare (2018). Ear health and hearing loss among Indigenous children. In *Australia's Health 2018*. Australia's health series no. 16. Canberra. Retrieved from <https://www.aihw.gov.au/getmedia/12c11184-0c0a-43ad-8386-975c42c38105/aihw-aus-221-chapter-6-4.pdf.aspx>

(see: Factors associated with poor hearing health; Health Services; Interventions and preventive actions)

What are the risk factors associated with chronic OM for Aboriginal and Torres Strait Islander children?

What are the consequences for children who suffer chronic OM? Consider the following contexts for these consequences.

- **Medical consequences:**
 - **Impact on early childhood development:**
 - **Impact on educational attainment:**
 - **Impact on vocational and employment outcomes:**
 - **Impact on Aboriginal and Torres Strait Islander communities:**

Otitis media guidelines for Australian Aboriginal and Torres Strait Islander children: summary of recommendations

What sort of programs have been developed to try to prevent ear disease?

C. Li'l Mike: The importance of engaging children and community in accessing healthcare that is culturally safe. Using Li'l Mike as an example.

This video features a brief interview with Australia's first Aboriginal Surgeon, A/Prof Kelvin Kong (also a UNSW Medicine graduate). As A/Prof Kong notes, poor engagement between a community and its health service is a large barrier to appropriate health care. This video outlines one strategy that has been implemented to break down this barrier.

Activity 4. What is the evidence for use of grommets?

Harry is 3-years old and his mother has noticed that he does not respond to noises and to calling his name. He has had a number of middle ear infections in the past six months. His mother takes him to their GP who refers them to an audiologist at the local community health centre for an assessment, including a hearing test. Harry's hearing test indicates bilateral conductive hearing loss (air conduction is impaired; bone conduction is normal). Further examination reveals bilateral 'glue ear' (otitis media with effusion).

Research the evidence-base for the effectiveness of grommets for otitis media with effusion, by consulting the following article:

Browning, G.G., Rovers, M.M., Williamson, I., Lous, J. and Burton, M.J. (2010). Grommets (ventilation tubes) for hearing loss associated with otitis media with effusion in children. *Cochrane Database of Systematic Reviews*, Issue 10. Art. No.: CD001801. [DOI:10.1002/14651858.CD001801.pub3](https://doi.org/10.1002/14651858.CD001801.pub3).

Plain language summary:

"**Grommets (ventilation tubes) for hearing loss associated with otitis media with effusion in children.**

Evidence suggests that grommets only offer a short-term hearing improvement in children with simple glue ear (otitis media with effusion or OME) who have no other serious medical problems or disabilities. No effect on speech and language development has been shown.

Glue ear is the build-up of thick fluid behind the ear drum. It is a common childhood disorder, affecting one or both ears, and is the major cause of transient hearing problems in children. The insertion of grommets (ventilation or tympanostomy tubes) into the ear drum is a surgical treatment option commonly used to improve hearing in children with bilateral glue ear as unilateral glue ear results in minimal, if any, hearing disability. This review found that in children with bilateral glue ear that had not resolved after a period of 12 weeks and was associated with a documented hearing loss, the beneficial effect of grommets on hearing was present at six months but diminished thereafter. Most grommets come out over this time and by then the condition will have resolved in most children. The review did not find any evidence that grommets help speech and language development, but no study has been performed in children with established speech, language, learning or developmental problems. Active observation would appear to be an appropriate management strategy for the majority of children with bilateral glue ear as middle ear fluid will resolve spontaneously in most children." (Browning, Rovers, Williamson, Lous & Burton, 2010)

Main results:

"We included 10 trials (1728 participants). Some trials randomised children (grommets versus no grommets), other ears (grommet one ear only). The severity of OME in children varied between

trials. Only one 'by child' study (MRC: TARGET) had particularly stringent audiometric entry criteria. No trial was identified that used long-term grommets.

Grommets were mainly beneficial in the first six months by which time natural resolution lead to improved hearing in the non-surgically treated children also. Only one high quality trial that randomised children (N = 211) reported results at three months; the mean hearing level was 12 dB better (95% CI 10 to 14 dB) in those treated with grommets as compared to the controls. Meta-analyses of three high quality trials (N = 523) showed a benefit of 4 dB (95% CI 2 to 6 dB) at six to nine months. At 12 and 18 months follow up no differences in mean hearing levels were found.

Data from three trials that randomised ears (N = 230 ears) showed similar effects to the trials that randomised children. At four to six months mean hearing level was 10 dB better in the grommet ear (95% CI 5 to 16 dB), and at 7 to 12 months and 18 to 24 months was 6 dB (95% CI 2 to 10 dB) and 5 dB (95% CI 3 to 8 dB) dB better.

No effect was found on language or speech development or for behaviour, cognitive or quality of life outcomes.

Tympanosclerosis was seen in about a third of ears that received grommets. Otorrhoea was common in infants, but in older children (three to seven years) occurred in < 2% of grommet ears over two years of follow up." (Browning, Rovers, Williamson, Lous & Burton, 2010)

Authors' conclusions

"In children with OME the effect of grommets on hearing, as measured by standard tests, appears small and diminishes after six to nine months by which time natural resolution also leads to improved hearing in the non-surgically treated children. No effect was found on other child outcomes but data on these were sparse. No study has been performed in children with established speech, language, learning or developmental problems so no conclusions can be made regarding treatment of such children." (Browning, Rovers, Williamson, Lous & Burton, 2010)

Should Harry be referred for surgery for his ear problems?

Activity 5. Reminder for SGS 8

In SGS 8, we will be working through some childhood cases of endocrine diseases. You will need access to a textbook of Physiology (either online or hardcopy) and any endocrine physiology lecture notes you may have.

SGS 8 - Endocrine system

Aims:

- To learn more about common endocrinology presentations through reviewing case scenarios.

Key concepts:

Endocrine physiology:

- Hypothalamic releasing factors.
- Pituitary hormones.
- Target glands.
- Hormonal control.
- Actions of hormones.
- Hyper- and hypo-secretion of hormones.

Clinical endocrinology:

- Examples of endocrine cases – presentation, diagnosis and management.

Resources:

Suitable electronic textbooks available online through the UNSW library are:

- Koeppen, B.M. & Stanton, B.A. (2024). Berne & Levy physiology (8th Ed.)
[Available from the UNSW library via ProQuest eBooks Collection](#)
- Gardner, D.G. & Shoback, D. (2018). Greenspan's Basic & Clinical Endocrinology (10th Ed.)
[Available from the UNSW library via McGraw-Hill AccessMedicine](#)
- Molina, Patricia E. (2023). Endocrine physiology (6th Ed.)
[Available from the UNSW library via McGraw-Hill AccessMedicine](#)

You should also have access to any endocrine physiology lecture notes you have (e.g. lectures on 'Hormones of the HP axis', 'Structure and function of the Thyroid', 'Steroidogenesis').

Process:

1. Research into endocrine case studies

2. Presentations and discussion of case studies

3. Quiz

4. Reminder – preparation for SGS 9

Activity 1. Research into endocrine case studies

In small groups of 4-5 students, you will be allocated one of the three endocrine cases below. In your group you will have time to read over the case and then research the information needed to answer the questions for the case. Save your answers in the shared document on Teams.

Activity 2. Presentations and discussion of case studies

Each small group will have 15 minutes to present the case and the answers to the questions associated with the case. There will be 5 minutes for discussion or further explanation.

Case Study 1

A 1-month-old baby boy presented to the paediatric emergency department with the following symptoms:

- 24 hours of poor feeding and lethargy
- Hypothermic (35.1°C)

The doctor gathered the following information of past medical history from the parents:

- Normal pregnancy

- Normal delivery at full term
- Birth length, weight and head circumference were all on 50th percentile
- Well after birth
- Breastfed
- Had Guthrie test (newborn screening tests from heel-prick) on day 2 post-delivery with no notifications being made of any abnormality

On examination the doctor noted the following signs:

- Length and weight on 10th percentile. Head circumference on 50th percentile
- Lethargic baby
- Micropenis; 1 cm stretched penile length (mean stretched penile length in a full-term newborn male is 3.5 cm)
- Baby had a seizure in the emergency department

The doctor ordered a series of test and received the following results:

- Bedside capillary blood glucose 2.2 mmol/L (normal fasting range 4 to 6 mmol/L)
- Blood sample taken at the time of glucose being low
 - Insulin <2 mU/L (normal fasting range 5-10 mU/L)
 - fT4 9.6 pmol/L (normal range 11.6 to 29.6 pmol/L) [free T4, which is not bound to transport proteins]
 - TSH 2.0 mU/L (normal range 1.7 to 9.1 mU/L)
 - Cortisol 117 nmol/L (normal range >550 nmol/L)
 - Growth hormone 8.5 mU/L (normal range >10 mU/L)

The baby was diagnosed with **congenital panhypopituitarism** (multiple pituitary hormone deficiencies).

Questions

1. What is congenital panhypopituitarism?

2. List the hormones produced by the anterior and posterior pituitary.

3. Explain the cause of each of the signs and symptoms?

4. If the Guthrie test checks for hypothyroidism, why was it normal?

5. Why is it not sufficient to measure random cortisol and growth hormone levels in individuals older than six months of age?

Case Study 2

A 16-year-old girl presents to her doctor with the following symptoms, which have developed over the last six months

- Used to be a good student but recently her grades have dropped
- Excessively irritable, excitable and emotional
- Short attention span and poor sleep
- Good appetite but is losing weight

On examination the doctor noted the following signs

- Warm moist skin
- Tachycardia
- Diffuse goitre

The doctor ordered the following tests with the following results

- Serum thyroxine (T_4) 69 pmol/L (normal range 10.3 to 24.5 pmol/L)
- Serum triiodothyronine (T_3) 24 pmol/L (normal range 4.3 to 8.1 pmol/L)
- Thyroid-stimulating hormone (TSH) 0.02 mU/L (normal range 0.7 to 5.7 mU/L)
- Auto-antibody tests may not necessarily be done. Usually only done for confirmation of diagnosis.

The girl was diagnosed with Graves' disease

Questions

1. What is Graves' disease? Include a description of the aetiology.

2. What is Graves' ophthalmopathy? How often is this associated with Graves's disease?

3. Explain the cause of the tachycardia.

4. Is Graves' disease life threatening? What is a thyroid "crisis" or "storm"?

5. What is the treatment of Graves' disease?

Case Study 3

A 33-year-old woman presents to her doctor because she has been feeling unwell for some time. The woman complained of the following symptoms:

- Weight gain
- Easy bruising
- Irregular menstrual cycle
- Muscle weakness
- Leg ulcers that won't heal

On examination, the doctor noted the following signs:

- Round, rosy face
- Protruding pendulous abdomen
- Increased facial hair
- Thin skin with bruises over lower extremities
- Poor calf muscle development
- Slightly swollen hands and feet
- Blood pressure of 155/100 mmHg

The doctor ordered some blood tests, the results of which are shown below.

- 24-hour urinary free cortisol level 130 µg/24 h (normal range 20 to 100 µg/24 h)
- Plasma ACTH 150 pg/mL (normal range 20 to 120 pg/mL)
- Elevated blood glucose
- Dexamethasone suppression test:

- Low dose: no change in urinary and plasma cortisol levels
- High dose: suppression of urinary and plasma cortisol levels

The result indicates Cushing disease.

Questions

1. What is Cushing syndrome and how is it different to Cushing disease?

2. Draw a diagram illustrating the hormonal control of the hypothalamic-pituitary-adrenal axis for the production of cortisol, including feedback loops. Describe the possible causes of Cushing syndrome. Which is the most likely cause in this patient?

3. Explain the cause of each of the signs and symptoms.

4. Explain how the biochemistry results lead us to a diagnosis of Cushing syndrome and the most likely cause?
a) 24-Hour Urinary Free Cortisol Level

b) Dexamethasone Suppression Test**Activity 3. Short quiz on endocrine disorders****Activity 4. Reminder – preparation for SGS 9**

- For SGS 9, you will need access to all your endocrine lecture notes and tutorials
- You should take a look at the following short videos as an introduction to the discussions in SGS 9 on transgender and disorders of sexual development (intersex):
 - The Gender Centre, NSW. In My Shoes video (6:50 mins)
<https://www.youtube.com/watch?v=MDuVbsg0eMo>
 - Tony Briffa's story on the National Institute for Challenging Homophobia (NICHE) (5:09 mins):
<https://www.youtube.com/watch?v=fFtXJOlxtPQ>

SGS 9 - Exploring Sexual Development

Aims:

The aim of this session is for students to use their knowledge of embryology and endocrine physiology to solve a clinical problem.

Key concepts:

- Sex steroid synthesis and its control.
- The role of sex steroids in bone growth and control of metabolism.
- Embryology of male and female reproductive tracts.
- Development of secondary sex characteristics.
- Phenotypic vs. genotypic sex.
- Ethics of differences of sexual development cases.

Resources:

Students should have access to their notes from Tutorial 3 (Endocrine physiology), the lectures on hypothalamic-pituitary axis and on steroid hormones.

Process:

- | |
|---|
| 1. Oliver's and Olivia's problem |
| 2. Gender, identity and differences of sexual development |
| 3. Preparation for SGS 10 |

Activity 1. Oliver's and Olivia's problem

You should take notes as you go. Some relevant charts and tables are provided below. Other useful slides used in this SGS will be released for your study after the session.

Oliver is a happy 8-months old boy who attends a paediatric endocrine clinic because of hypospadias and undescended gonads. On examination, Oliver's weight is 8.5 kg and his height is 68 cm. He has a phallus (2 cm long) and penile hypospadias, however the gonads are impalpable.

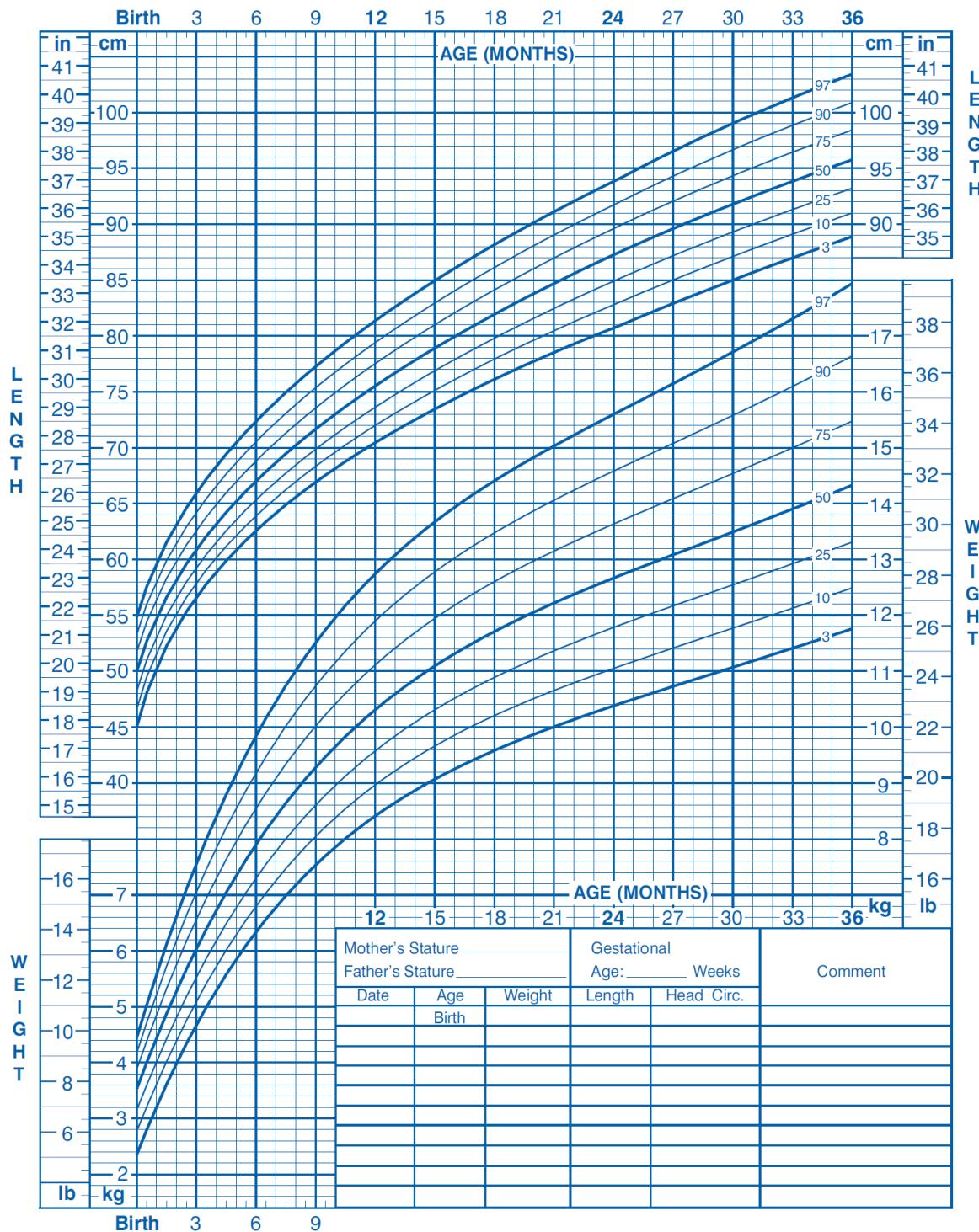
Which particular features of this child's development are normal, and which are abnormal?

Plot the weight and height on the growth chart and estimate centiles.

Birth to 36 months: Boys
Length-for-age and Weight-for-age percentiles

NAME _____

RECORD # _____



Published May 30, 2000 (modified 4/20/01).

SOURCE: Developed by the National Center for Health Statistics in collaboration with
 the National Center for Chronic Disease Prevention and Health Promotion (2000).
<http://www.cdc.gov/growthcharts>



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Notes

Notes

Activity 2. Gender, identity and differences of sexual development

1. What are the distinctions and confusions between the following: sex, gender, intersex and transgender?

2. Consider the following information on the incidence of differences of sex development.

Table: Differences of Sex Development (intersex)

Source: Intersex Society of North America: <http://www.isna.org/faq/frequency>, which summarises the statistics from an article: Blackless M., Charuvastra A., Derryck A., Fausto-Sterling A., Lauzanne K, and Lee E. (2000). How sexually dimorphic are we? Review and synthesis. American Journal of Human Biology 12:151-166. https://unsw.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60772615340001731?auth=SAML

Total number of people whose bodies differ from standard male or female	1 in 100 births
Total number of people receiving surgery to “normalise” genital appearance	1 or 2 in 1,000 births
Late onset adrenal hyperplasia	1 in 66 individuals
Hypospadias (urethral opening between corona and tip of glans penis)	1 in 770 births
Klinefelter (XXY)	1 in 1,000 births
Not XX and not XY	1 in 1,666 births
Hypospadias (urethral opening in perineum or along penile shaft)	1 in 2,000 births
Vaginal agenesis	1 in 6,000 births
Androgen insensitivity syndrome	1 in 13,000 births
Classical congenital adrenal hyperplasia	1 in 13,000 births
XY female and XX male sex reversals	1 in 20,000 live births
Ovotestes	1 in 83,000 births
Idiopathic (no discernable medical cause)	1 in 110,000 births
Partial androgen insensitivity syndrome	1 in 130,000 births
Complete gonadal dysgenesis	1 in 150,000 births
Iatrogenic (caused by medical treatment, for instance progestin administered to pregnant mother)	no estimate
5 alpha reductase deficiency	no estimate
Mixed gonadal dysgenesis	no estimate
Aromatase deficiency	no estimate

3. What seems to cause DSD?

Where to now for Oliver/Olivia?

Should children with ambiguous genitalia be raised as a boy or a girl and how should parents be counselled regarding surgical options and gender reassignment?

1. Do you think Oliver/Olivia feels like a boy or a girl?

2. Do children at this age have a strong gender identity?**3. How should the parents be counselled about possible gender reassignment and psychosocial implications?****4. What are the issues for such children's future sexual identity?****5. What ethical principles are involved here?****6. What rights does Oliver/Olivia have?****Further resources:**

- Özen, S., Atik, T., Korkmaz, Ö., Onay, H., Gökşen, D., Özkinay, F., Çoğulu, Ö., & Darcan, Ş. (2020). Aromatase deficiency in two siblings with 46,XX karyotype raised as different genders: A novel mutation (p.R115X) in the CYP19A1 gene. *Journal of Clinical Research in Pediatric Endocrinology*, 12(1), 109–112. [[Available via UNSW Library](#)]
- Jones, M. E., Boon, W. C., McInnes, K., Maffei, L., Carani, C., & Simpson, E. R. (2007). Recognizing rare disorders: aromatase deficiency. *Nature Clinical Practice. Endocrinology & Metabolism*, 3(5), 414–421. [[Available via UNSW Library](#)]
- Fan, L., Zhang, B., Li, L., & Gong, C. (2020). Aromatase deficiency: A case series of 46, XX Chinese children and a systematic review of the literature. *Clinical Endocrinology (Oxford)*, 93(6), 687–695. [[Available via UNSW Library](#)]
- Rochira, V., Zirilli, L., Maffei, L., Premrou, V., Aranda, C., Baldi, M., Ghigo, E., Aimaretti, G., Carani, C., & Lanfranco, F. (2010). Tall Stature without Growth Hormone: Four Male Patients with Aromatase Deficiency. *The Journal of Clinical Endocrinology and Metabolism*, 95(4), 1626–1633. [[Available via UNSW Library](#)]

In My Shoes video (6:50 mins)

<https://www.youtube.com/watch?v=MDuVbsg0eMo>

Tony Briffa's story on NICHE (5:09 mins)

<https://www.youtube.com/watch?v=fFtXJOlxtpQ>

Organisation Intersex International Australia Limited: <https://ihra.org.au/>

The Gender Centre: <http://www.gendercentre.org.au>

Transgender Victoria: Transgender Victoria | TGV

Twenty10: <http://www.twenty10.org.au>

Doak, Kate. (2015, June 15). Life as a transgender woman. Sydney Morning Herald.

<https://www.smh.com.au/lifestyle/life-and-relationships/living-as-a-transgender-woman-who-doesnt-yet-pass-20150614-ghnpym.html>

Recent changes in birth certificate laws / passport issue in Australia:

ABC (2014, April 2). High Court recognises non-specific gender. *RN Drive*.

<http://www.abc.net.au/radiational/programs/drive/high-court-recognises-non-specific-gender/5362540>

Sex and Gender Diverse Passport Applicants. Australian Passport Office. Australian Government: Department of Foreign Affairs and Trade:

<https://www.passports.gov.au/passportsexplained/theapplicationprocess/eligibilityoverview/Pages/changeofsexdoborpob.aspx>

Activity 3. Preparation for SGS 10

- Group projects are to be presented to SG peers in SGS 10, and this is a requirement of the course. There is a tailored peer feedback form especially for the BGDB group project (see SGS 10). Each group should take a look at this when considering their presentation.
- **Each** member of the project team must be prepared to answer questions relating to the project from students and facilitators.
- Students should upload their presentations to the SG Teams site and organise who will be responsible for sharing their screen for the presentation, prior to the SGS.

Scenario 3: Teenage Mental Health

Schedule

Refer to the eMed Timetable system and email updates sent to your UNSW email account for accurate times and locations.

Learning Activities	Principal Teacher
Scenario Plenary 3: Teenage Mental Health	Wilde, Alex
Science Practical 17: Group Project 5: Bringing it all together	Ariff, Amir
Tutorial 5: Ethics tutorial 2	Langendyk, Vicki
Scenario Group Session 10: Child Health Group Project presentations	Chau, Patrick
Science Practical 18: Sexual differentiation	Shirazi, Reza
Hospital Clinical Skills Session 3: Introduction to the mental health system from the patient and provider perspective	Kalucy, Megan Rees, Susan
Lecture 43: Epigenetics	Waters, Paul
Lecture 44: What is a mental disorder?	Le Nedelec, Marty
Lecture 45: Regulating emotions and behaviour	McHugh, Catherine
Lecture 46: Stress	Chander, Russell
Scenario Group Session 11: Life's ups and downs	Chau, Patrick
Lecture 47: Anxiety and psychosis	McHugh, Catherine
Lecture 48: Personality	Reppermund, Simone
Online Q&A and Content Recap Session 3	Birzniece, Vita Spencer, Kalli Chau, Patrick
Lecture 49: Talking to teenagers	Singh, Yolisha
Lecture 50: Regulating emotion: depression and sadness	Bayes, Adam
Scenario Group Session 12: Factors affecting mood and mental health	Chau, Patrick
Science Practical 19: Mental Health and Online CBT	Lewis, Trevor Court, Jay
Lecture 51: Family violence, abuse and neglect	Henry, Amanda
Lecture 52: Treatment decisions in depression	Bayes, Adam
Lecture 53: Clinical Skills Review	Spencer, Kalli Britton, Susan
Lecture 54: Accessible Health Care	Lingam, Raghu
Lecture 55: Being sick – decisions and impact on children and teenagers	McLoone, Jordana
Tutorial 6: Measuring personality	Chander, Russell
Scenario Group Session 13: Accessibility to health care for teenagers and Exam review quiz	Chau, Patrick
Lecture 55: Course Wrap up and exam tips	Birzniece, Vita Spencer, Kalli Chau, Patrick

Note: This schedule is subject to change. It only shows the first instance of any one activity. Refer to the eMed Timetable system and email updates sent to your UNSW email account for accurate times and locations.

Overview

This Teenage Mental Health scenario explores some of the changes that occur during adolescence, including the physiological changes, emerging sexuality, and emotional changes. Adolescence is a time of important transitions that can impact mental health of teenagers.

Aims:

To develop an understanding of:

- The transition between childhood and adulthood.
- The associated development of identity, with respect to cultural and social values, emerging sexuality and gender identity.
- Mental well-being and coping strategies for dealing with the stressors of adolescent life.
- The distinction between normal adolescent behaviour and mental health problems.
- The accessibility of health care for young people.

Key concepts:

- Normal mood.
- Stress and factors that affect the response to stress.
- Cognitive behavioural therapy model.
- Well-being, resilience and coping.
- Psychiatric conditions in adolescence.
- Risk and protective factors for mental health issues in adolescence.
- The interaction between genetic and environmental factors that contribute to major depressive disorder.
- Issues involved around accessibility of health care for teenagers.
- Mental health promotion programs for teenagers.

Cautionary note:

The topics under discussion in this scenario may well resonate with personal or family experiences of mental health issues, suicide, bullying, your current stress levels, etc. If you need help or support, please speak with your facilitator or contact:

Faculty Wellbeing Officer (<https://www.unsw.edu.au/medicine-health/study-with-us/student-life-resources/wellbeing>):

Catherine Marley

Email: c.marley@unsw.edu.au

OR

UNSW Psychology and Wellness (<http://student.unsw.edu.au/counselling>)

Level 2, East Wing, Quadrangle Building,

Tel: 9385 5418

Email: counselling@unsw.edu.au

Office Hours: 9:00am - 5:00pm, Monday to Friday

Out of hours: Call UNSW Mental Health Support, 5pm – 9am: 1300 787 026

Other useful services:

- **Headspace**, <http://www.headspace.org.au>
- **Reach Out!**, <https://au.reachout.com>
(Online youth mental health service) run by the Inspire Foundation
- **Youth Beyondblue**, <http://www.youthbeyondblue.com/>
(online advice support)
- **Lifeline**, <http://www.lifeline.org.au>
(24/7 telephone crisis support) Tel: 131 114
- **Kidsline**, <http://www.kidshelp.com.au>
(telephone counsellors for callers up to age 25 yrs) Tel: 1800 55 1800
- **Doctor's Health Advisory Service (NSW)**, <http://www.dhas.org.au>
(24/7 helpline (Tel: 02 9437 6552) for NSW doctors, including medical students

Scenario 3:

David was a happy boy who did well in school, especially in the sciences. By the age of 9 he had decided he wanted to be a doctor, to help people and discover new treatments. When he was 12, David's parents' relationship broke down and they went through a bitter divorce. David found the arguments distressing and was upset that no matter what he tried he could not make his parents happy with each other. They would become very angry and he felt they did not care enough about him and his sister to try to stay together. David noticed that he felt pretty low at times but found he could retreat to his computer games and competing with the school swimming squad, which he still enjoyed.

When his parents split up David decided to live with his father and new stepmother in Sydney, while his older sister lived with their mother in Goulburn. David missed his Mum and sister but felt they did not miss him that much. His mother told him she had depression and had been to see a doctor and had some tablets for it. He saw on Instagram that his older sister also had depression, but he didn't know the details. This reminded him that his mother had once explained that his Uncle suffered from depression too.

David's new stepmother was initially a great support who helped him cope with his parents' split. Soon after the new family settled in, David's stepmother had a baby, William, who was born with Down Syndrome (Trisomy 21). Shortly after the birth, David's father told him his stepmother had developed postnatal depression. David noticed she was very tired and didn't smile or talk to him as much. William seemed to take up all his parents' attention. David's father and stepmother were absorbed with the new baby and David felt cast aside. At times they even seemed to be angry with him for getting in the way. It was just like when his Mum and Dad broke up – they didn't have time for him and didn't seem to care what he did at school or how his sports were going. David felt sad when he was at home, and again turned to his schoolwork for an escape. He also found it easier to spend time away from home with his friends.

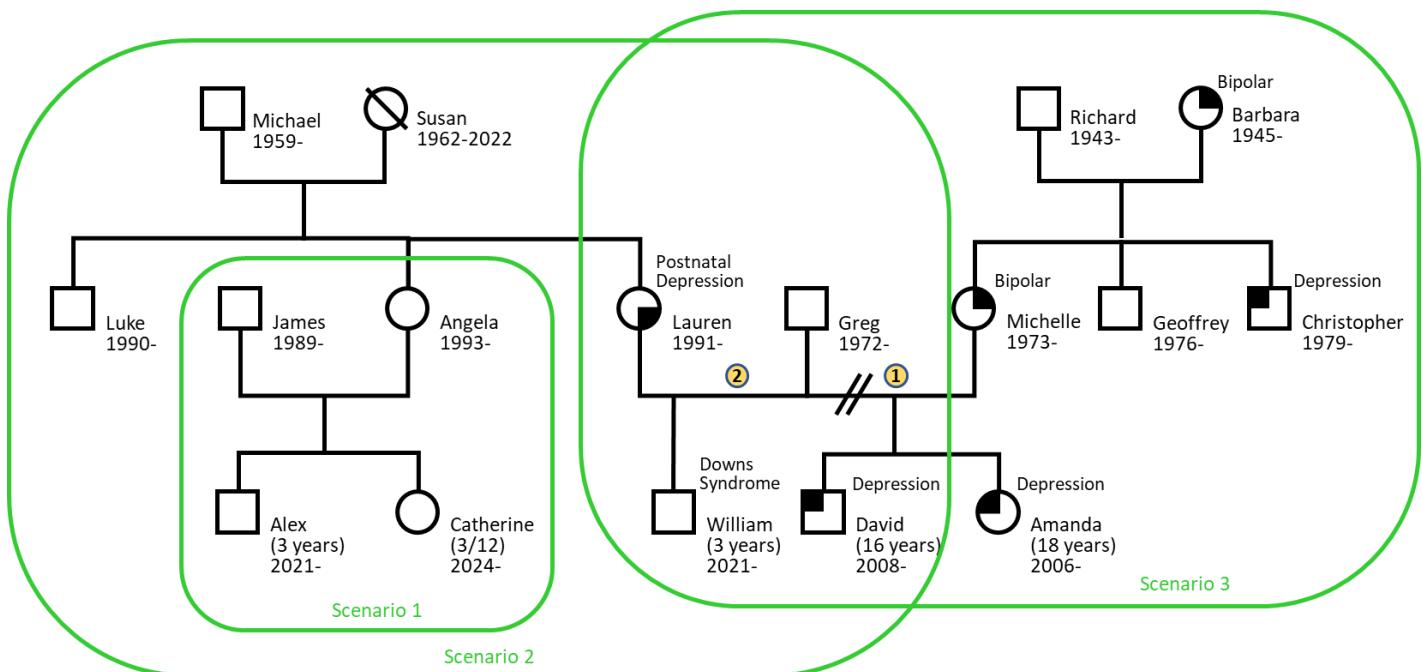
Over the next year, David's home life gradually improved and he found his parents were less cranky with him and his stepmother smiled more. He also enjoyed playing with William, who was mostly a happy baby.

Homelife had been fairly stable, but then, in Year 9, David didn't do as well as he had expected to in the National Assessment tests (NAPLAN). He scored in band 9 for all three tests (reading, language conventions and numeracy). The national minimum expected is band 6, but David's best friends all gained band 10 or above. He was really upset as he had achieved good results at secondary school and had done better than his peers in most schoolwork assessments during year 8. He felt like a failure and was embarrassed to have his friends know his results. They would think he was stupid, and that all his talk about doing medicine had just been big lies. He found it hard going to school and facing them and his teachers.

David didn't talk with his parents about his worries. They always seemed too busy to spend time with him and were focused on William, who was now a toddler with special needs. David thought he might go and live with his mother and sister. When his mother told him that was not an option David felt like he had nowhere to turn. No-one had any time for him or thought he was important. They must have decided he was a failure too.

David felt terrible. Nothing would lift his black mood. He had trouble sleeping at night and had no energy and no longer felt able to take part in the swimming team. He withdrew from his friends and his grades started slipping further as he went into year 10. He decided he wouldn't be worthy of medical school and there wasn't much point trying any more. He often stayed in bed all day feeling hopeless instead of going to school. One day David googled "teenage sadness" on the net. From the information that came up he realised his problem was more than just sadness. He didn't really know where to get help and was reluctant to seek help or tell anyone about his symptoms.

Genogram for Scenario 3



□ = male

○ = female

⊗ = deceased female

● □ = Bipolar

● ▨ = Depression

● □ = Postnatal depression

// = separated

SGS 10 - Child Health Group Project presentations

Aims:

This session is designed to allow students to report on their group project work.

The aim of this session is to encourage students to:

- Learn from each other about areas they have not had time to pursue themselves.
- Gain experience in making presentations and handling questions.
- Gain experience in giving and receiving feedback, including making self-assessments.

Key concepts:

- Presentation skills.
- Criteria for assessing presentations.
- Self-assessment.

Resources needed:

- Whatever the students need for their presentations.
- Presentation feedback forms (on Teams).

Process:

1. Establish order and time limits
2. Presentations and discussion
3. Reminder about peer feedback on Teamwork

Activity 1. Establish order and time limits

Establish an order for the presentations at the beginning of the session. Depending on how many groups you have, the suggested timing is approximately 30 minutes per group. This is divided as follows: 20 minutes for the presentation (including the teamwork element), 5 minutes for questions and 5 minutes for completion of feedback forms.

A non-presenting group will be asked to complete a feedback form for each presenting group. Forms will be available in your scenario group Teams channel in the SG10 folder. You should discuss which group(s) will be providing feedback for each presentation. Facilitators will also complete feedback forms which will be emailed to groups after the SG.

Activity 2. Presentations and discussion

The assessment criteria for the group project are as follows (see the assessment section at the end of the student guide for full instructions):

Focus capability 1: Self-Directed Learning and Critical Evaluation

- Appropriately interprets descriptive and basic statistical results in analysing data and presents these analyses well using clear, self-generated, summary tabulation and graphs. [1.6.5 *Demonstrates an understanding of basic statistical principles and ability in handling and presenting quantitative, and to a lesser degree qualitative, information appropriately.*]
- Critically interprets and succinctly discusses the results of a multiple logistic regression analysis using statistical terminology and in relation to previous research evidence on the topic. [1.6.5 *Demonstrates an understanding of basic statistical principles and ability in handling and presenting quantitative, and to a lesser degree qualitative, information appropriately*]
- Critiques the quality of the study design and methodology used, referring to possible issues and biases. [1.6.4 *Demonstrates the following skills: appraising the quality and relevance of the information found*]
- Articulates a considered and evidence-based conclusion. [1.6.5 *Demonstrates an understanding of basic statistical principles and ability in handling and presenting quantitative, and to a lesser degree qualitative, information appropriately.*]

Focus capability 2: Social and Cultural Aspects of Health and Disease

- Identifies clear, sensible research questions, and chooses appropriate variables and risk factor(s), providing adequate scope for analysis. Contextualises the results of the studied article in relation to the general population of study. [1.2.1 *Identifies environmental, psychological, social and cultural issues which contribute to health problems in a scenario (e.g. sexuality, stress, family relationships, risky behaviours)*]
- Relates the interpretation of data with methods used to support the hypothesis and explain the findings accordingly in context of the research question [1.2.2 *Explains the mechanisms by which those psychological, social and cultural issues identified affect health; 1.2.5 Understands equity and its implications for health care delivery for individual and population based approaches*]
- Critically analyses and interprets the results of the research in terms of the evidence available utilising knowledge of the health care needs of the study participants, as well as the benefits/ detriments to society. [1.2.3 *Identifies health care needs of different groups in society (e.g. the elderly, indigenous people, immigrant groups and refugees); 1.2.4 Describes and interprets patterns of illness including use of basic statistical and epidemiological concepts*]

The generic capabilities (Effective Communication, Self-Directed Learning and Critical Evaluation, and Teamwork) will be assessed using the generic criteria listed in the Program guide.

Project title:			
Scenario Group:	Date:	Time:	
Project Group members:			
Criteria	Completed OK? Yes / No	Comments	
EXPLANATION OF THE PROJECT			
<ul style="list-style-type: none"> Provides background and context for the sociocultural factors of the selected article Clearly describes the article's research questions/hypotheses and draw conclusions on the relevance and appropriateness of the statistical methods used in the study 			
UNDERSTANDING THE RESULTS			
<ul style="list-style-type: none"> Interprets descriptive and basic statistical results in analysing data and presents these analyses in a clear and understandable format. Critically interprets and discusses the results of the statistical method used in succinct manner. Describes the quality of the study design and methodology used, referring to possible issues and biases. 			
<ul style="list-style-type: none"> Contextualises the results of the studied article with regards to a general population of study. Critically analyses and interprets the results of the research in terms of the evidence available utilising knowledge of the health care needs of the study participants, as well as the benefits / detriments to society. 			
<ul style="list-style-type: none"> Able to answer audience questions. 			
PRESENTATION			
<ul style="list-style-type: none"> Oral presentation was clear, well structured and easily understood. Presentation demonstrated consistency in style and audio-visual aids or handouts were clear, well-structured and easy to read. Timing was controlled - most aspects were covered. 			
STIMULATING LEARNING			
<ul style="list-style-type: none"> Presentation was interesting and engaging. Significant issues and unanswered questions were highlighted. I learned a lot from this presentation/This presentation stimulated me to find out more about the topic. 			
TEAMWORK			
<ul style="list-style-type: none"> The transition from one speaker to the other went smoothly. Team members demonstrated support for the speaker. Presenters have minimal overlap in their presentations. The group demonstrated team unity. 			

Overall grade (please select): **P+** **P** **P-** **F**

Please add specific comments:

Name:

Facilitator or Student?

- P- represents a relatively poor and/or incomplete performance, in terms of the assessment criteria
- P represents a performance that achieves most of the stated criteria, in a reasonably effective manner
- P+ means that all the criteria were attained, and that they were done in a way that demonstrated a clear understanding of and mastery of the topic.

Full definitions at: <http://medprogram.med.unsw.edu.au/grading>

Activity 3. Reminder: Peer feedback on eMed Feedback system

Don't forget to enter your comments on your peers' contributions to the teamwork for your project into the eMed Feedback system after the project report has been submitted. The eMed Feedback system can be accessed via the eMed homepage and will accept student comments for **7 days** after the project report is submitted.

SGS 11 - Life's Ups and Downs

Aims:

- To explore life's normal ups and downs.
- How teenagers respond to these.

Key concepts:

- Normal mood.
- The response to stressful events.
- Factors that affect response to stress.
- Cognitive behavioural therapy model.
- Well-being, resilience and coping.

Resources needed:

- Beyond Blue. Anxiety and depression: an information booklet.
https://moodle.telt.unsw.edu.au/pluginfile.php/11142666/mod_book/chapter/440668/bl0885-booklet--anxiety-and-depression.pdf
- Australian Psychological Association. Understanding and managing stress.
<https://psychology.org.au/for-the-public/psychology-topics/stress>
- 'Making Sense of CBT', from Mind (the Mental Health Charity) on YouTube at
https://www.youtube.com/watch?v=9c_Bv_FBE-c [running time: 3:34 minutes]
- A guide to what works for depression – Beyond Blue
https://moodle.telt.unsw.edu.au/pluginfile.php/11142666/mod_book/chapter/440668/GuideToWhatWorksForDepression.pdf
- A guide to what works for anxiety – Beyond Blue
<https://cdn.intelligencebank.com/au/share/zKG/7MpVv/8zl1R/original/A+guide+to+what+works+for+anxiety>

References and further reading

- Depression in adolescents and young adults - Black Dog Institute.
<https://www.blackdoginstitute.org.au/docs/default-source/factsheets/depressioninadolescents.pdf?sfvrsn=2>
- Depression in adolescents and young adults – Clinical Practice Guidelines – Beyond Blue.
http://www.24hmb.com/voimages/web_image//upload/file/20140614/20851402752241427.pdf
- What works for depression in young people – Beyond Blue
https://edge.sitecorecloud.io/beyondblue1-beyondblueltd-p69c-fe1e/media/Project/Sites/beyondblue/PDF/Resource-Library/Young-people/bl0790_lr2.pdf

Process:

1. Explore the scenario plenary and identify key issues
2. Life's ups and downs: How do we respond to stress?
3. Life's ups and downs: Different models for psychological treatment
4. Effectiveness of psychological treatments for depression and anxiety

Activity 1. Explore the scenario plenary and identify key issues

This activity will provide an opportunity to discuss the plenary lecture and to identify the main issues raised by the scenario. In the plenary lecture, an interview with Nic Newling will be discussed. Nic has a history of bipolar disorder and has become an international advocate for mental health and suicide prevention. The scenario explores the life of David; how he is coping with school and the changes that have occurred in his family life.

Activity 2. Life's ups and downs: How do we respond to stress?

In this activity you will analyse and discuss the scenario case involving David to help you understand his situation, the stressors that have occurred in his life, and how he responded to the stressors.

i) **Identify the situation that seems to have precipitated David's distress.**

ii) **What is stress?**

iii) **Using the ecological model of health as a framework, identify the factors from David's scenario that may have contributed to his distress.**

What are his intrapersonal / individual factors?

What are the interpersonal factors?

What are the community / organisational factors?

iv) **How did David respond to these stressful factors?**

List David's responses in the table below in the categories of thoughts, feelings or behaviours.

	David's Responses	Alternative Responses
THOUGHTS		
FEELINGS		
BEHAVIOUR		

v) **Does everyone respond to stressful factors the same way?**

- What are some alternative responses to the same stressors? Write some suggested alternative responses in the table above.
- Are David's responses based on rational thoughts? Is there evidence to support his thoughts, or is there evidence contrary to his thoughts? Is he attempting to interpret the situation without all of the evidence?
- Could David have responded differently?

- What might a friend think about David's situation?

- Are there aspects of the situation that David can't change?

Activity 3. Life's ups and downs: different models for psychological treatment

Access the Beyond Blue document 'Anxiety and depression: an information booklet' (on Teams) and read through the section on 'Treatments for anxiety and depression: Psychological treatments' (pg. 27). As a group, briefly discuss the main points for cognitive behaviour therapy, behaviour therapy and mindfulness based cognitive therapy. Make notes / summarise each of the treatment options below. This is just meant to be a brief introduction of some of the treatment options.

- i) **What is cognitive behaviour therapy?**

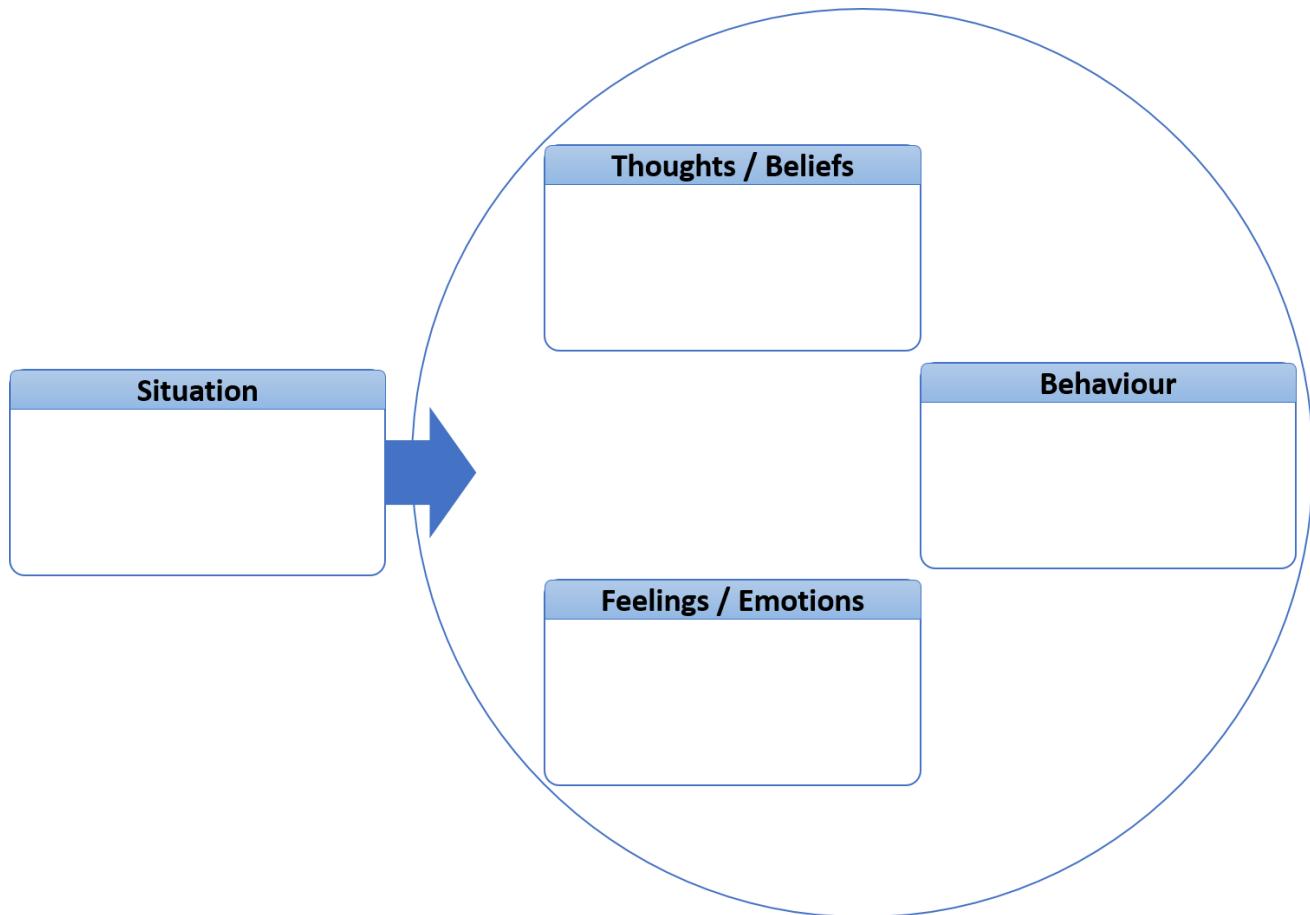
- ii) **What is behaviour therapy?**

- iii) **What is mindfulness based cognitive therapy?**

Video: 'Making Sense of CBT'

The cognitive behaviour model is one way to explain our responses to life events. The video on CBT is from Mind (the Mental Health Charity, UK; <https://www.mind.org.uk/>) and is designed as an introduction to people considering cognitive behaviour therapy as a treatment. Watch the video and make links to the information that was obtained from the Beyond Blue document ('Anxiety and depression: an information booklet').

- iv) **Sketch out the elements that contribute to the cognitive behaviour model and indicate how they interact in the space below.**



Activity 4. Effectiveness of psychological treatments for depression and anxiety

You will be placed into three groups and allocated one of the following treatments:

- cognitive behavioural therapy
- behavioural therapy
- mindfulness-based therapies

Each group will use the Beyond Blue resources ‘A guide to what works for depression’ and ‘A guide to what works for anxiety’ (both available on Teams) to determine the effectiveness of their treatments for both depression and anxiety (generalised anxiety disorder). Record your findings in the table below.

In addition, each group will select another psychological treatment for depression listed in the resource and describe what it is, how it is thought to work and the effectiveness of this treatment in the table. You will also need to report your findings to the larger group.

Effectiveness of psychological treatments

Cognitive Behavioural Therapy	
Depression	Generalised Anxiety Disorder
Behavioural Therapy	
Depression	Generalised Anxiety Disorder
Mindfulness Based Therapies	
Depression	Generalised Anxiety Disorder

Psychological Treatment:

What is it?	How is it thought to work?	Does it work?

Psychological Treatment:

What is it?	How is it thought to work?	Does it work?

Psychological Treatment:

What is it?	How is it thought to work?	Does it work?

SGS 12 - Factors affecting mental health

Aims:

In this session you will have the opportunity to learn more about mental health issues in adolescence.

- Generalised anxiety disorder.
- Social anxiety disorder (social phobia).
- Major depressive disorder.

Key concepts:

- Psychiatric conditions in common in adolescence.
- Prevalence of adolescent mental illness.
- Risk and protective factors for mental health problems in adolescence.

Resources:

- Specific resources for cases are listed.

Process:

- | |
|---|
| 1. Case studies – researching and preparing brief presentations |
| 2. Case studies – presentation of cases to class |
| 3. General discussion relating activities back to the scenario |
| 4. Preparation for SGS 13 |

Activity 1. Case studies – researching and preparing brief presentations

For this activity you will work in one of three groups to discuss a case and complete the associated tasks. You will then present the case and information from these tasks to the whole group in the next activity. There are resources for each case, which can be found on Teams, however you should try and find further information online. When you present your case please ensure you compare and contrast the symptoms present in your case to those expected with normal ups and downs of life.

Case 1 – Billy

Billy is a 17-year-old high school student who has been referred to a psychologist by his GP. In the previous six months Billy has experienced acute episodes of palpitations, shortness of breath and sweating. These episodes were discrete and had a sudden onset. Billy's GP saw Billy immediately after one of these episodes and all medical evaluations, including physical examination, vital signs and blood tests, were normal. Billy denies any drug or alcohol use.

During discussions with Billy's psychologist it is discovered that Billy has witnessed domestic abuse at his home. He states that his parents are not aware that he has witnessed these two events. Billy mentions that he is having difficulty controlling his emotions, especially the worry that his family is going to be split up. Billy feels that this constant worrying is impacting his schoolwork. He tries to maintain a level of calm at home because he wants his family to be happy. At school the pressure of academic work leads to Billy not being able to control his level of worry which he states is getting worse. He is having trouble concentrating, which he believes is due to a lack of sleep.

Task 1

Using the DSM-V Generalised Anxiety Disorder (GAD) extract on Teams, describe the key diagnostic features for GAD.

Task 2

What further questions could the psychologist ask regarding Billy's experiences and support network?

Task 3

Using the information from the Black Dog Institute and Beyond Blue, describe the common treatments for GAD.

Task 4

What is the prevalence of GAD? Include in your answer the prevalence in adults and young adults and the prevalence in males and females.

Task 5

What risk and protective factors can you identify for GAD?

Resources (SG12 folder on Teams)

- AIHW (2011) *Young Australians: their health and wellbeing 2011* (Cat. no. PHE 140). Australian Institute of Health and Welfare. (<https://www.aihw.gov.au/getmedia/14eed34e-2e0f-441d-88cb-ef376196f587/12750.pdf.aspx?inline=true>)
- Australian Bureau of Statistics (2023) National Survey of Mental Health and Wellbeing: Summary of Results (<https://www.abs.gov.au/statistics/health/mental-health/national-survey-mental-health-and-wellbeing-summary-results/latest-release>)
- Beyond Blue – Anxiety (<https://www.beyondblue.org.au/the-facts/anxiety>)
- Black Dog Institute – Anxiety (www.blackdoginstitute.org.au/resources-support/anxiety/)
- Generalized Anxiety Disorder - Diagnostic and statistical manual of mental disorders (DSM-5®). (2013) American Psychiatric Association

Case 2 - Sally

Sally is an 18-year-old university student who presents to her GP after receiving a warning letter from her university about her lack of attendance. Sally states that she struggles to attend face-to-face classes because of a “crippling fear” she will be singled out or asked to speak in a group situation. She experienced a fear of speaking in front of her class in high school but this has developed to the extent that she now avoids any face-to-face classes. Sally has tried to overcome this but experiences feelings of panic and anxiety whenever she leaves her house to come to university. She states that the fear mainly involves being embarrassed or judged by her peers. Sally has always received very high marks in her academic work but she fears her inability to attend classes will result in her failing.

Sally’s GP asks her about other social situations such as going out with friends or any extra-curricular activities. Sally admits that she has become increasingly isolated and has not left the house more than a couple of times over the previous 6-months. She lives with her parents and they do any chores or tasks that involve having to leave the house. When asked about her social circle, Sally states that she has a close couple of friends but only sees them when they visit her at home. She tried to go to a movie with these friends recently but left before the movie started after experiencing anxiety in the somewhat crowded movie theatre.

Task 1

Using the DSM-V Social Anxiety Disorder (SAD)/Social Phobia extract on Teams, describe the key diagnostic features for SAD.

Task 2

What further questions could the GP ask regarding Sally’s experiences and support network?

Task 3

Using the Social Phobia resources from Beyond Blue (on Teams), describe the common causes and treatments for social phobia including advice for people who know someone with social phobia.

Task 4

What is the prevalence of SAD/Social Phobia? Include in your answer the prevalence in adults and young adults and the prevalence in males and females.

Task 5

What risk and protective factors can you identify for social phobia/SAD?

Resources (SG12 folder on Teams)

- AIHW (2011) *Young Australians: their health and wellbeing 2011* (Cat. no. PHE 140). Australian Institute of Health and Welfare. <https://www.aihw.gov.au/getmedia/14eed34e-2e0f-441d-88cb-ef376196f587/12750.pdf.aspx?inline=true>
- Australian Bureau of Statistics (2023) National Survey of Mental Health and Wellbeing: Summary of Results (<https://www.abs.gov.au/statistics/health/mental-health/national-survey-mental-health-and-wellbeing-summary-results/latest-release>)
- Beyond Blue – Social Phobia (<https://www.beyondblue.org.au/mental-health/anxiety/types-of-anxiety/social-anxiety-disorder> or https://moodle.telt.unsw.edu.au/pluginfile.php/11142666/mod_book/chapter/440674/bl0509-social-phobia.pdf)
- Social Anxiety Disorder (Social Phobia) - Diagnostic and statistical manual of mental disorders (DSM-5®). American Psychiatric Association

Case 3 - Jimmy

Jimmy is a 19-year-old apprentice mechanic who presents to his GP with concerns regarding his motivation and weight gain. Jimmy states that he has always wanted to become a mechanic and used to help his uncle at his mechanic business after school. After Jimmy finished high school, he started an apprenticeship and for the first two months he thoroughly enjoyed spending his days learning and working. This situation has progressively changed over the past two months however and Jimmy no longer looks forward to going into the garage.

The GP is initially concerned the lack of motivation Jimmy has experienced may be a post viral response or anaemia, however blood tests and physical examinations are all unremarkable. Asking more detailed questions, the GP finds that Jimmy describes his lack of motivation as feeling low and sad. When asked about situations outside of his apprenticeship Jimmy admits that he no longer enjoys socialising with his friends and spends most of his weekends alone, drinking alcohol, occasionally smoking cannabis and sleeping. More recently he has started drinking immediately after work and often sleeps through his alarm in the morning. He feels very guilty about his performance at the garage and notes that his supervisors have talked to him about his lack of concentration and interest in his work. When asked directly about his mood Jimmy states that he feels depressed most of the day, every day, but denies any thoughts/planning of suicide.

Task 1

Using the DSM-V Major Depressive Disorder (MDD) extract on Teams, describe the key diagnostic features for MDD.

Task 2

What further questions could the GP ask regarding Jimmy's experiences and support network?

Task 3

Using the information from the Black Dog Institute and Beyond Blue, briefly describe the common treatments for MDD.

Task 4

What is the prevalence of MDD? Include in your answer the prevalence in adults and young adults and the prevalence in males and females.

Task 5

What risk and protective factors can you identify for MDD? Is Jimmy's alcohol and cannabis use a concern?

Resources (SG12 folder on Teams)

- AIHW. (2011). *Young Australians: their health and wellbeing 2011* (Cat. no. PHE 140). Australian Institute of Health and Welfare. <https://www.aihw.gov.au/getmedia/14eed34e-2e0f-441d-88cb-ef376196f587/12750.pdf.aspx?inline=true>
- Australian Bureau of Statistics (2023) National Survey of Mental Health and Wellbeing: Summary of Results (<https://www.abs.gov.au/statistics/health/mental-health/national-survey-mental-health-and-wellbeing-summary-results/latest-release>)
- Beyond Blue – Depression (<https://www.beyondblue.org.au/the-facts/depression/what-causes-depression>)
- Beyond Blue – Antidepressant medication (https://edge.sitecorecloud.io/beyondblue1-beyondblue1d-p69c-fe1e/media/Project/Sites/beyondblue/PDF/Resource-Library/bl0125-antidepressant-medication-fact-sheet-acc.pdf?sc_lang=en)
- Black Dog Institute – Understanding Depression (<https://www.blackdoginstitute.org.au/resources-support/depression/>)
- Churchill, S. A., & Farrell, L. (2017). Alcohol and depression: evidence from the 2014 health survey for England. *Drug and alcohol dependence*, 180, 86-92. [Available via UNSW Library]
- Major Depressive Disorder (MDD) - Diagnostic and statistical manual of mental disorders (DSM-5®). American Psychiatric Association

Activity 2. Case Presentations

Each group will be given 10 minutes to present their case followed by 5 minutes for questions and discussions. The order of the case presentations can be decided as a group.

Activity 3. General Discussion relating activities back to the scenario

Introduce David's sister Amanda

David from the 3rd BGDB scenario has a sister Amanda who is 18 years old. When Amanda and David's parents split up 4 years ago Amanda moved with her mother, Michelle, to Goulburn whilst David stayed in Sydney with his father and new stepmother. She is half the way through Year 12 at school in Goulburn, rural NSW. She has been feeling very tired and rundown ever since her first real romantic relationship ended a few months ago.

Amanda had to take four weeks off school just before her HSC trials and now says that she can't sleep, has lost her appetite, can't concentrate and is getting panicky about the forthcoming exams. She is convinced that she is a hopeless case and is going to fail the HSC and will not gain entry into her preferred program of study – a Veterinary Science degree at Wagga Wagga. Unfortunately, Amanda's relationship with her mother is up and down; Michelle is 45 years old and has a long-standing history of anxiety and depression and is currently out of work. Now, Amanda feels that she just can't talk with her mum and she is worried that she is 'turning into an alcoholic'.

Fortunately, Amanda's best friend Maggie has been supportive by trying to convince her that if she puts in the work she will do well. Amanda is starting to study again but is still worried, so she comes to see you, her GP, for advice and to obtain a medical certificate to state that she cannot sit the trial HSC exams.

As a group, identify the risk factors and protective factors in the cases from the scenario – David and Amanda.

Risk Factors	Protective Factors

Activity 4. Preparation for SGS 13

In SGS 13, students will have the opportunity to explore factors affecting health care access for teenagers and will learn about mental health promotion.

Students are to divide into 4 groups.

Download and read the following document, noting the section that is specific for your group.

NSW Kids and Families (2014). Youth Health Resource Kit. An Essential Guide for Workers. NSW Kids and Families: Sydney.

Full resource available at: [youth-health-resource-kit.pdf \(nsw.gov.au\)](http://youth-health-resource-kit.pdf (nsw.gov.au))

GROUP 1: Read Section 1.1: Adolescence – a developmental perspective, p15-18. Review 1 website (below).

GROUP 2: Read Section 2.2: Young people and health services, p30-31. Review 1 website (see below).

GROUP 3: Read Section 3.6: Cultural diversity and culturally-competent practice, p123-128. Review 1 website (see below).

GROUP 4: Read Section 3.13: Working with families, p197-201. Review 1 website (see below).

[Note: These are only short, very summarized readings]

Websites: Students to take note of the types of information available, who it is aimed at and any tools or programs the organisation provides/is developing.

- 1) Headspace (<http://www.headspace.org.au/>)
- 2) ReachOut.com (<http://au.reachout.com/>)
- 3) Be You (<https://beyou.edu.au>)
- 4) YouthBeyond Blue (<http://www.youthbeyondblue.com/>)

SGS 13 - Accessibility to health care for teenagers – Where do I go?

Aims:

- To learn about mental health promotion programs and signposting towards them
- To explore issues involved around accessibility of health care for teenagers, with an emphasis on living rurally.
- To explore access to specialised health care when living rurally and its implications for the patient

Key concepts:

- Mental health promotion.
- Accessibility and health care.
- Cultural competence.
- Youth-friendly health care.
- Course review and revision.

Resources:

Preparation task reading:

NSW Kids and Families (2014). Youth Health Resource Kit. An Essential Guide for Workers. NSW Kids and Families: Sydney.

1. Section 1.1: Adolescence – a developmental perspective
2. Section 2.2: Young people and health services
3. Section 3.6: Cultural diversity and culturally-competent practice
4. Section 3.13: Working with families

Full resource available at: [youth-health-resource-kit.pdf \(nsw.gov.au\)](http://youth-health-resource-kit.pdf (nsw.gov.au))

- Headspace (<http://www.headspace.org.au/>)
- ReachOut.com (<http://au.reachout.com/>)
- Be You (<https://beyou.edu.au/>)
- Youth Beyond Blue (<http://www.youthbeyondblue.com/>)

Additional resources:

- NSW Health. (2017). *NSW Youth Health Framework 2017-24*. North Sydney: NSW Department of Health. <http://www.health.nsw.gov.au/kidsfamilies/youth/Pages/yh-framework.aspx>

Process:

1. Mental Health Resources
2. Accessible youth health care
3. Rural Healthcare in a Medical Emergency
4. Exam review quiz (PowerPoint)
5. MyExperience: Course and teacher evaluation

Trigger Warning

The topics under discussion in this scenario group may well resonate with personal or family experiences of mental health issues. Topics covered in the scenario include self-harm, suicide and life-threatening illness. If you need help or support, please speak to your facilitator, or refer to the start of this guide for details of further support available.

Activity 1. Clinical Case and Mental Health Resources

Clinical Case: Joseph is a 14-year-old boy living with his family on a farm in a rural town in NSW. He is the oldest of 5 siblings. Recently the family have experienced financial difficulties, with his father working long hours and his mother busy caring for the younger children, one of which has a disability. Joseph developed problems with his mental health 2 years ago, beginning with anxiety and compulsive tendencies. More recently he has become increasingly low in mood and has started self-harming. He denies any feelings of suicidal intent.

Imagine you are a GP working in Joseph's rural town and he has presented to you for the first time. Based on your review of the websites (preparation for this SGS), explain to Joseph what each of the following 4 organisations do and how they may be able to benefit him:

Headspace**ReachOut****Be You****Youth Beyond Blue****Activity 2: Accessible youth health care****Clinical Case continued:**

You have had a few young people present with mental health concerns lately and the local commissioning group are looking at setting up a youth-friendly mental health practice. They have asked for your input on designing this service. Discuss as a whole group how you would design an accessible youth mental health general practice. Consider what factors are important to the patient that makes it accessible for young people in rural settings. Consider Joseph's case if this helps and draw on your own experience as students. In the second column consider what barriers you might face when attempting to deliver such a service.

A good design for an accessible youth mental health practice:
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Barriers to delivering the service in a rural setting:**Activity 3. Rural Healthcare in a Medical Emergency****Clinical Case Continued:**

Joseph continued to experience problems with his mental health over the next few months. Unfortunately, Joseph's mental health declined, and he attempted to take his own life with an overdose of paracetamol. Joseph did not immediately tell anybody he had taken the paracetamol and a few days later began suffering with severe nausea. His mum also noticed a yellow tinge to the white of his eyes and took him to the local Emergency Department. Joseph was taken into the resuscitation bay and the team explained to his mother he was extremely unwell. The local hospital does not have any Paediatric cover or Intensive Care as is common with small, rurally located hospitals and a decision was made to retrieve Joseph to a specialist hospital. The Newborn and Paediatric Emergency Transport Service (NETS) were contacted and an urgent aeromedical retrieval to Paediatric Intensive Care (PICU) in Sydney was arranged. Sydney is 4.5 hours away from Joseph's hometown by road. Joseph's mother was able to go with Joseph in the helicopter. Over the next few days Joseph's condition improved however it became evident that he had acute liver failure because of the overdose. He was placed on the transplant list to await a new liver. Joseph's mother had to return home to care for her other children but would come to Sydney as often as she could whilst Joseph awaited transplant. Fortunately, a donor liver was located, and Joseph underwent a liver transplant. He had a few complications post-transplant but eventually made a good recovery and was discharged from hospital a few weeks later. Joseph will require close follow up over the coming months with frequent blood tests. He has medications that he has to take every day for the rest of his life to prevent his body from rejecting the liver.

In the table below consider the impact and challenges faced by the following people in this scenario. Reread the clinical case from the start of the SG if you need to. Consider how living rurally may further impact these problems when compared to someone living in a city. Try to think about physical health, mental health, and impact on day-to-day life.

Joseph	Physical Health: Mental Health: Day to Day:
---------------	--

Joseph's Mother	Mental Health: Day to day:
Joseph's Family	Day to day:

Finally, make a list of the difficulties health professionals might face in managing Joseph in a small town.

Activity 4. Exam review quiz

Questions from a range of activities in the course will be provided as a way of helping the students revise for the course exam and as a way of bringing the issues raised in the course together.

Activity 5. MyExperience Evaluation

We value your feedback on this course and the Beginnings, Growth and Development Conveners and Course Design and Implementation Group look at students' comments carefully in guiding the development of the course each year. Students are to complete course MyExperience evaluation survey via the link from the BGDB Moodle module. Thank you! Hope you enjoyed BGD-B and good luck for your future studies!

Assessment

Assessment overview

Assessment in this course involves an assignment, a group project, a course examination and attendance requirements. There is a set group project, the BGDB Journal Group Project, which is linked to the Quality of Medical Practice element and your Society & Health Research Skills formative analysis. The individual assignment may be chosen from the set list or negotiated on a topic of your choice that is relevant to the themes of this course. You are reminded of the program requirements to negotiate at least one assignment during Phase 1.

Successful completion of the assignment and project work is necessary before your exam results will be released.

You are reminded that questions relating to the tutorials and scenario group sessions may be included in the end of course examination. Refer to the Phase 1 guide and Medicine Program website for information on the format of the end of course examination and for detailed progression rules. A formative online assessment will also be available.

While your final result for the course will largely be determined by your performance in the end of course examination, the assignment and project work is also an important component of the assessment for the course. The graded assignments and projects will form part of the portfolio examination at the end of your second year, where they will be used as evidence of your achievement in each of the capabilities.

Academic honesty and plagiarism

Students should be familiar with the UNSW Student Conduct Policy and the policies relating to code of conduct particularly relating to academic misconduct and plagiarism <https://student.unsw.edu.au/conduct>.

The Academic Skills website is main repository for resources for staff and students on plagiarism and academic honesty. These resources are located at: <https://student.unsw.edu.au/plagiarism>.

The Faculty of Medicine regards the maintenance of academic integrity by staff and students as a matter of the highest priority. The Faculty participates in the University's use of the similarity detection software Turnitin (see <http://www.turnitin.com/>). Students work submitted to the eMed Portfolio system will be compared to other items in the eMed system, to material on the Internet, electronic publications and to items in the Turnitin database.

You must submit identical copies of each assignment and project to eMed Portfolio and to Turnitin by using the link in the Moodle module, located under "Assessments Hub".

Use of AI for Assignments and Projects

During the early planning, researching and evaluation stage of your assignment or group project you are permitted to use software to generate initial ideas and structures. However, you must develop or edit those ideas to such a significant extent that what is submitted is your own work, i.e., what is generated by the software should not be a part of your final submission. It is a good idea to keep copies of your initial drafts to show the convenors if there is any uncertainty about the originality of your work.

If you have used AI tools during any stage of your assignment or project, you should reflect on this usage in your generic reflection/teamwork reflection including how it helped your learning or preparation.

All students are required to include the Phase 1 AI declaration on the title page of their assignment. Please note that your submission will be passed through an AI-text detection tool. If your marker has concerns that your answer contains passages of AI-generated text that have not been sufficiently modified you may be asked to explain your work, but we recognise that you are permitted to use AI generated text as a starting point and some traces may remain. If you are unable to satisfactorily demonstrate your understanding of your submission you may be referred to UNSW Conduct & Integrity Office for investigation for academic misconduct and possible penalties.

Phase 1 AI Declaration

Please include ONE of the following declarations on the title page (not included in word count).

- During the preparation of this assessment, I/we used [NAME of TOOL/ SERVICE/ SOFTWARE] for the purpose of [briefly explain]. After using this AI assistance, I/we reviewed and edited the content and take full responsibility for the content of this assessment.

OR

- During the preparation of this assessment, I/we did NOT USE ANY AI tools, services or software.

Assignments and projects offered in BGD B 2024

Assignments

	Title	Focus Capabilities
A1	Ethical considerations of enabling equitable use of CFTR modulators in children with cystic fibrosis	<ul style="list-style-type: none"> Social and Cultural Aspects of Health and Disease Ethics and Legal Responsibilities
A2	Adolescent health care experience	<ul style="list-style-type: none"> Social and Cultural Aspects of Health and Disease Development as a Reflective Practitioner
A3	Diet, the gastrointestinal microbiome and disease: How are they linked?	<ul style="list-style-type: none"> Using Basic and Clinical Sciences Self-Directed Learning and Critical Evaluation
A4	Growth without Growth Hormone	<ul style="list-style-type: none"> Using Basic and Clinical Sciences Patient Assessment and Management

Projects

	Title	Focus Capabilities
P1	BGDB Group Project	<ul style="list-style-type: none"> Self-Directed Learning and Critical Evaluation Social and Cultural Aspects of Health and Disease

Please note that project groups will be expected to report to their scenario group in SGS 10, and that all members of the group will be expected to answer questions from the group and the facilitator on the presentation.

All assignments and projects will also be assessed for each of the generic capabilities, as outlined below.

Capability	Criteria
Effective communication <i>(applicable to both assignments and projects)</i>	<ul style="list-style-type: none"> Clarity (clear, simple, grammatical language, terms explained) Logical structure. Appropriate language, length, style and format for the intended audience Appropriate use of media (visuals, graphs, video, etc.)
Self-directed learning and critical evaluation <i>(applicable to both assignments and projects)</i>	<ul style="list-style-type: none"> Sources (range, citation standards, quality, relevance, search strategy, people consulted) Scope (addresses all requirements of the assignment or project) Critical thinking (evidence of awareness of bias in sources, others' viewpoints, own views, logical argument)

Capability	Criteria
	<p><i>Negotiated assignments will be marked on the following additional criteria:</i></p> <ul style="list-style-type: none"> • Quality of the learning plan, including the assessment criteria. • Time management, including reporting, drafts, deadlines • Search strategy
Development as a reflective practitioner <i>(applicable to assignments)</i>	<ul style="list-style-type: none"> • Provides a credible self-assessment of the quality of the assignment report in terms of its strengths and weaknesses in meeting the assessment criteria for the focus and generic capabilities. • Identifies strengths and weaknesses of the research process used and articulates credible plans to improve research skills • Reflects on the assignment topic, the research process and draws implications for wider learning and future practice.
Teamwork <i>(applicable to projects)</i>	<ul style="list-style-type: none"> • Provides evidence of team meetings by appending to the project report documents such as: agendas, minutes, summaries of discussions, or lists of decisions made.
Teamwork <i>(continued)</i>	<ul style="list-style-type: none"> • Provides evidence of the evaluation of the group process using tools provided, focusing on at least one of the following: group roles and responsibilities, communication between group members, resolution of conflicts, behaviour in group meetings (task, support, non-productive). • Identifies teamwork issues, (e.g. discussion of the contributions of team members as required) that facilitated or impeded the group process and outlines plans to address these in future group work.

Word Count

The word count for assignments and projects includes all the text in the report, apart from the cover page and the reference list. Assignments are up to 2000 words and projects up to 2500 words, unless there is an explicit exception for any individual assignment or project.

You should format your report in accordance with the specification on the Medicine program website, and include a word count. Ensure that you carefully reference your written work using the UNSW Medicine referencing style (APA, 7th Edition).

Due dates for registering your choice of assignments and projects

You **must** register your choice of assignment by registering your preferences on the **eMed Registrations system**.

Expression of interest for Negotiated Assignments	9 am, Wednesday 24 April 2024
Submission of proposals for Negotiated Assignments	9 am, Monday 29 April 2024
Registration for all other Assignments and Group Project*	4 pm, Friday 3 May 2024

*NB:

- Only one student from your ‘group project’ group should register in eMed on behalf of the group.
- Once you have been named in a project group you will not be able to register for any other group projects.
- You **must retain** the membership of your SH project group for BGDB. Any change in membership should be discussed with Dr Amir Ariff via email amir.ariff@unsw.edu.au or via MS Teams chat.

Due dates for submission of project reports and assignments

Submission of Assignments	9 am, Monday 20 May 2024
Submission of Negotiated Assignments	9 am, Monday 27 May 2024
Submission of Project reports and any supporting evidence	9 am, Monday 3 June 2024

You may submit earlier if this suits your study schedule.

Negotiated assignments

There is a quota of 110 submissions for the negotiated assignments. You must register an expression of interest (EOI) by **9 am Wednesday 24 April 2024** with the eMed Registrations to be considered for a negotiated assignment. No details of the proposal are required for the EOI. Students will be notified if they are successful and may proceed to submit a negotiated proposal. Students who are unsuccessful are to register for a set assignment by the appropriate date.

Proposals for a negotiated assignment must be submitted by **9 am Monday 29 April 2024** to the **eMed Registrations system**. Do not proceed with your proposed assignment until you get approval from the Negotiated Assignment Group (NAG). **Unauthorised submissions for these assignments will not be accepted**, resulting in an overall fail for the assignment.

Note that you must include at the end of the title of your negotiated assignment, the discipline that is most relevant to your project, e.g. 'Comparison of the pathogenesis of viral and bacterial pneumonia (PATHOLOGY)'.

See the program website for information on the process for negotiating an assignment
<http://medprogram.med.unsw.edu.au/negotiating-assignment>.

A discussion forum is provided in the BGDB Moodle site under the 'Assessment Activities & Information' section.

Submission to eMed Portfolio

Information on submitting assessments to eMed is available at:
<http://medprogram.med.unsw.edu.au/emed-portfolio>

Please refer to the Medicine Program website for penalties that you will incur if you submit after the due dates: (<http://medprogram.med.unsw.edu.au/penalties>).

If there are extenuating circumstances that prevent you from meeting the due date for submission, contact the course convenor before the due date to request an extension. In most cases a medical certificate or a similar level of documentation will be required.

Assignment 1: Ethical considerations of enabling equitable use of CFTR modulators in children with cystic fibrosis

Graduate capabilities assessed in this assignment

This assignment focuses on the following capabilities:

- Social and Cultural Aspects of Health and Disease
- Ethics and Legal Responsibilities

The report will also be assessed for each of the generic capabilities (Effective Communication, Self-Directed Learning and Critical Evaluation, and Development as a Reflective Practitioner).

Introduction

Cystic fibrosis (CF) is a life-limiting genetic condition where pathogenic mutations of the cystic fibrosis transmembrane conductance regulator (CFTR) gene lead to a multisystem disorder affecting the lungs, sweat glands, gastrointestinal system, and the reproductive system. The treatment of CF has evolved rapidly in the last decade with the introduction of the highly effective CFTR modulators, such as elexacaftor-tezacaftor-ivacaftor (ETI, trade name Trikafta® in Australia).

CFTR modulators are a new class of drugs that act by improving the intracellular processing, trafficking and/or function of the defective CFTR protein. Based on the genetic mutation of the patient with CF, it is determined whether an individual patient is eligible for CFTR modulator therapy. It is estimated that approximately 10% of patients with CF have a genetic mutation which is not suitable for CFTR modulator therapy. Approximately 90% of patients with CF have the F508del mutation, which is treatable with Trikafta® (Lopes-Pacheco, 2020).

However, with more than 1000 mutations of the CFTR gene there are racial and ethnic differences in CF mutations, with patients from regions such as the Middle East, Asia and Latin America less likely to carry the F508del mutation.

Aside from genetic factors, a limiting factor for accessing CFTR modulator therapy is the differing availability of the medication between countries due to its high cost and the difference in healthcare systems. The cost of the CFTR modulator therapy exceeds AUD 250,000 per year per patient for their total lifetime. For eligible children and adults in Australia, Trikafta® can be accessed through the Pharmaceutical Benefits Scheme (PBS) for a maximum of AUD AUD31.60 per month, or AUD7.70 for concession card holders. In the US, the list price of Trikafta® is over USD 250,000 annually, and hence millions of dollars over a patient's lifetime. It has been estimated that cost of production for Trikafta® is USD 5,676 per year, more than 90% lower than the US list price (Guo et al., 2022). Throughout much of Asia, Africa and Latin America, Trikafta® is not available to any patients with CF, likely due to its high price.

Thus, the cost factors (especially for countries where there is no government subsidy for the medication cost) have led to inequitable access to highly effective therapy for patients with CF worldwide. Further, CFTR modulators are a health system resource allocation dilemma even for the most robust and well-funded health systems. For patients with CF from low- and middle-income countries, the delay in access to effective CF treatment further exacerbates the poorer health outcomes already experienced by these patients due to social and cultural disparities.

Aims

The primary aims of this assignment are:

1. Demonstrate an understanding of potential barriers and challenges to achieve equitable care for children with CF worldwide.
2. To critically discuss potential ethical and/or legal considerations relating to health care resource allocation, using children with CF and costly highly effective CFTR modulator therapy as an example.

Course themes and related learning activities

This assignment relates to the course theme of childhood growth and development.

It relates to childhood genetic conditions, rare disease, advocacy for children's health, global health, health inequality and health resource allocation.

Task description

1. Identify barriers and challenges underlying inequitable access to effective treatment for children with CF worldwide. Include in your discussion ethical considerations and principles.
2. Use your knowledge of the healthcare system in Australia in comparison to other countries to propose possible strategies to allow more equitable access to CFTR modulators for children with CF in Australia and one low- or middle-income country worldwide.
3. Consider how scarce health resources should be allocated and distributed from the perspective of two of the following: (1) a parent of a child with CF (2) a clinician (3) government health minister (4) pharmaceutical company representative.

Report requirements

The report should be 2000 words (maximum), including the generic reflective component. Use the references and readings provided as background material and in addition, source your own references from the literature, internet, and print media. You should format your report in accordance with the specification on the Medicine program website (<http://medprogram.med.unsw.edu.au/assignments-and-projects-phase-1>), including a word count on the title page and following the APA 7th edition citation style. Please refer to the word count guidelines for penalties that will be applied to reports that exceed the maximum length <https://medprogram.med.unsw.edu.au/penalties> (login required).

Time Allocation Guide

Weeks 1-2	Read the references listed below and start thinking about the issues underlying equitable access to effective treatment for rare diseases in children worldwide.
Week 3	Conduct a literature search to ensure a thorough understanding of barriers and challenges underlying equitable and affordable access to medication such as CFTR modulator therapy for children with CF. Begin drafting your report in line with each of the tasks.
Week 4	Prepare your report and check if you have addressed all the assessment criteria.
Week 5	Edit the report and proofread. Submit the final version to eMed and Turnitin in Moodle by the due date.

Assessment Criteria

For a P grade, the written report should meet the following criteria:

Focus Capability 1: Social and Cultural Aspects of Health and Disease

- Demonstrates an understanding of the Australian healthcare system. (1.2.6 Describes the basic structure of the Australian healthcare system including the responsibilities of Commonwealth, State, non-government organisations and the private sector.)
- Identifies barriers and challenges underlying inequitable access to effective treatment for children with CF worldwide. (1.2.5 Understands equity and its implications for health care delivery for individual and population-based approaches.)
- Uses the knowledge of the health system in Australia in comparison to other countries to propose possible strategies to allow more equitable access to CFTR modulators for children with CF in Australia and one low- or middle-income country worldwide. (1.2.7 Describes how people living in Australia access (or are unable to access) their health care system.)

Focus Capability 2: Ethics and Legal Responsibilities

- Discusses the ethics of access to effective treatment for children with CF worldwide and the likely impact of the development of CFTR modulators. (**1.7.4 Identifies and discusses the ethical aspects of scenarios and other experiences.**)
- Considers how scarce health resources should be allocated and distributed from the perspective of two of the following: (1) a parent of a child with CF (2) a clinician (3) government health minister (4) pharmaceutical company representative. (**1.7.6 Understands and can discuss a number of different ethical perspectives and apply at least three of these to clinical situations.**)

The generic capabilities (Effective Communication, Self-Directed Learning and Critical Evaluation, and Development as a Reflective Practitioner) will be assessed using the generic criteria listed in the Program guide, on the Medicine Program website and in this course guide.

References

- Guo, J., Wang, J., Zhang, J., Fortunak, J., & Hill, A. (2022). Current prices versus minimum costs of production for CFTR modulators. *Journal of Cystic Fibrosis*, 21(5), 866-872.
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- The drug is a ‘miracle’ but these families can’t get it , published Feb 7 2023,
<https://www.nytimes.com/2023/02/07/health/cystic-fibrosis-drug-trikafita.html>.
https://unsw.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60790630940001731?auth=SAML

Contact: A discussion regarding this assignment is available through Moodle.

Assignment 2: Adolescent health care experience

Graduate capabilities assessed in this assignment

This assignment focuses on the following capabilities:

- Social and Cultural Aspects of Health and Disease
- Development as a Reflective Practitioner

The report will also be assessed for each of the generic capabilities (Effective Communication, Self-Directed Learning and Critical Evaluation, and Development as a Reflective Practitioner).

Introduction

Adolescence is a period of critical developmental changes, when the transition through puberty and learning to be independent occurs. Although adolescence is generally regarded as a healthy time of life, there are certain important health issues that start to peak. Adolescents are particularly sensitive to changes in social environments, which may adversely affect mental health. They are also prone to injuries, substance abuse, nutrition problems and infectious diseases. Barriers to health care for young people are well known with recent studies finding over 80% of young people identifying at least one barrier to accessing health care services. To ensure equality in health care access for young people the healthcare system needs to adapt and address these barriers.

Aims

The primary aim of this assignment is to reflect on your own experiences receiving health care as an adolescent and how your experience would guide you to potentially modify future practice. An additional aim is to gain understanding of the Australian healthcare system and access to health care during adolescence.

Note: This assignment is open to every student, regardless of where they spent their teenage years.

Course themes

This assignment may relate to the course themes of: Childhood growth and development; Puberty, adolescence, sexuality and relationships; or Nutrition, growth and body image.

Task description

4. Reflect on your experiences with healthcare delivery during your adolescence. Consider your own feelings and behaviour during and after your interaction with the healthcare system and consider the behaviour of the healthcare workers with whom you interacted.
5. Discuss your access to healthcare during your adolescence. Describe any barriers or enablers that you were aware of that impacted your access to health care.
6. Use your knowledge of healthcare systems to critique your adolescent experience.

NB Students who were not in Australia during their adolescence have the following alternative task:
Consider if your experience of healthcare in your adolescence would be different in Australia and explain both how and why.

7. Use your experience and knowledge of Australian healthcare systems to reflect on possible methods to make health care more accessible for young people, to ensure equality and ease of access as well as optimal health outcomes.

Report requirements

The report should be 2000 words (maximum), including the generic reflective component. Use the references and readings provided as background material and in addition, source your own references from the literature, internet, and print media. You should format your report in accordance with the specification on the Medicine program website (<http://medprogram.med.unsw.edu.au/assignments-and-projects-phase-1>), including a word count on the title page and following the APA 7th edition citation style. Please refer to the word count guidelines for penalties that will be applied to reports that exceed the maximum length <https://medprogram.med.unsw.edu.au/penalties> (login required).

Time Allocation Guide

- Week 1-2 Reflect on your experiences of health care delivery during your adolescence. Make notes during this time to inform your assignment.
- Week 3 Conduct a literature search to ensure a thorough understanding of the Australian healthcare system. Begin with the references below.
Begin drafting your report in line with each of the tasks.
- Week 4 Prepare your report and check if you have addressed all the assessment criteria.
- Week 5 Edit the report and proofread. Submit the final version to eMed and Turnitin in Moodle by the due date.

Assessment Criteria

For a P grade, the written report should meet the following criteria:

Focus Capability 1: Social and Cultural Aspects of Health and Disease

- Demonstrates an understanding of the Australian healthcare system. (**1.2.6 Describes the basic structure of the Australian healthcare system including the responsibilities of Commonwealth, State, non-government organisations and the private sector.**)
- Demonstrates an understanding of the challenges for adolescents to access the healthcare system. (**1.2.7 Describes how people living in Australia access (or are unable to access) their healthcare system.**)
- Identifies health care needs of adolescents. (**1.2.3 Identifies health care needs of different groups in society (e.g. the elderly, indigenous people, immigrant groups and refugees.)**)

Focus Capability 2: Development as a Reflective Practitioner

- Provides reflection on own experiences with health care delivery during adolescence. (**1.8.4 Provides accurate and neutral descriptions of own behaviour, emotions, and intentions. Analyses the impact of own and other's behaviour and cultural background on self and others.**)
- Identifies ways to modify future practice to provide efficient and accessible health care for adolescents by using own experience and knowledge of healthcare systems. (**1.8.5 Analyses experiences and feedback in terms of strengths and weaknesses, identifies barriers to improvement in all capability areas and addresses these barriers, or articulates realistic and coherent plans to do so.**)

The generic capabilities (Effective Communication, Self-directed Learning and Critical Evaluation and Development as a Reflective Practitioner) will be assessed using the generic criteria listed in the Program guide, on the Medicine Program website and in this course guide.

References

- The Australian health system. <https://www.health.gov.au/about-us/the-australian-health-system>
- Dixit, S.K., & Sambasivan, M. (2018). A review of the Australian healthcare system: A policy perspective. *SAGE Open Med*, 6, 2050312118769211. doi: 10.1177/2050312118769211 https://unsw.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60863080380001731?auth=SAML
- Robards, F., et al. (2019). Predictors of young people's healthcare access in the digital age. *Aust N Z J Public Health*, 43(6), 582-588. doi: 10.1111/1753-6405.12936 https://unsw.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60863085090001731?auth=SAML
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- The Royal Children's Hospital Melbourne. (2009). The adolescent model of care. https://www.rch.org.au/uploadedFiles/Main/Content/cah/RCH_ModelofCare_November2009_Final.pdf

Contact: A discussion forum regarding this assignment is available through Moodle.

Assignment 3: Diet, the gastrointestinal microbiome and disease: how are they linked?

Graduate capabilities assessed in this assignment

This assignment focuses on the following capabilities:

- Using Basic and Clinical Sciences
- Self-Directed Learning and Critical Evaluation

The report will also be assessed for each of the generic capabilities for assignments (Effective Communication, Self-Directed Learning and Critical Evaluation, and Development as a Reflective Practitioner).

Introduction

The interactions of diet and the gastrointestinal (GI) microbiome are increasingly considered important elements impacting on long-term health and disease. Diet is arguably the primary factor contributing to the composition of the GI microbiome. The GI microbiome intimately interacts with host immunity with the potential to influence health status, both within and outside of the GI tract.

Aim

The aim of this assignment is to develop an understanding of how diet can influence the GI microbiome composition and environment and subsequently how the microbiome contributes to disease.

Course themes

This assignment relates to the course theme of childhood growth and development.

Task description

1. Choose either
 - a chronic GI condition (Inflammatory Bowel Disease [IBD] (Crohn disease or ulcerative colitis) or Irritable Bowel Syndrome [IBS])
or
 - an extra-GI condition (autism or epilepsy).
2. Provide an overview of aetiological factors that contribute to the development of the disease you have chosen. If a GI condition is chosen, describe how this condition relates to the concepts of organic and functional disease.
3. Describe the influence of diet on shaping the GI microbiome from birth to adolescence. Include in this description how social and cultural aspects may contribute to dietary choices that can impact on the GI microbiome.
4. Describe how diet and the GI microbiome may subsequently contribute to the condition you have chosen.
5. Critically evaluate the evidence for the therapeutic benefits of modifying the GI microbiome as a treatment for the condition you have chosen.

Assignment requirements

The report should be 2000 words (maximum), including the generic reflective component. Use the references and readings provided as background material and in addition, source your own references from the literature, internet and print media. You should format your report in accordance with the specification on the Medicine program website (<http://medprogram.med.unsw.edu.au/assignments-and-projects-phase-1>), including a word count on the title page and following the APA 7th edition citation style. Please refer to the word count guidelines for penalties that will be applied to reports that exceed the maximum length <https://medprogram.med.unsw.edu.au/penalties> (login required).

Your report should provide a summary of the condition you have chosen, how diet shapes the GI microbiome, how diet can negatively influence microbiome composition and contribute to disease and subsequently how diet can be used to positively influence the microbiome and assist in treatment of disease. The report should also include the generic reflective component.

Time Allocation Guide

- Weeks 1-2 Read the listed references and choose a condition. Conduct a literature search.
- Week 3 Evaluate relevant articles and begin drafting your report in response to each of the tasks.
- Week 4 Prepare your report and check if you have addressed all the assessment criteria.
- Week 5 Edit the report and proofread it. Submit the final version to eMed and Turnitin in Moodle by the due date.

Assessment Criteria

For a P grade, the written report should meet the following criteria:

Focus Capability 1: Using Basic and Clinical Sciences

- Describes the basic pathophysiological process and aetiology of the chosen condition. If a GI-condition is chosen, describes how this condition relates to the concepts of organic and functional disease. **(1.1.3 Describes the patho-physiological process of health problems and can explain their basis at the whole person, organ system, cellular and molecular levels.)**
- Explains the process of microbiome development from birth to early adolescence, highlighting the role of diet and dietary choices. Describes how diet and the GI microbiome may subsequently contribute to the chosen condition. **(1.1.1 Explains mechanisms that maintain a state of health.)**

Focus Capability 2: Self-Directed Learning and Critical Evaluation

- Identifies relevant high-quality sources. Critically evaluates the evidence for use of modification of the GI microbiome to improve the chosen condition. Assesses conflicting sources of information and provides conclusions showing an awareness of the level of evidence and limitations in sources used. **(1.6.4 Demonstrates the following skills in Phase 1: Formulating and applying appropriate information searching strategies. Using databases such as Medline and other information sources appropriately. Appraising the quality and relevance of the information found. Using appropriate citation standards.)**
- Correctly interprets and discusses the quantitative and qualitative data from relevant studies **(1.6.5 Demonstrates an understanding of basic statistical principles and ability in handling and presenting quantitative and qualitative information appropriately).**

The generic capabilities (Effective Communication, Self-Directed Learning and Critical Evaluation, and Development as a Reflective Practitioner) will be assessed using the generic criteria listed in the Program guide, on the Medicine Program website and in this course guide.

References

- Adolph, T. E., & Zhang, J. (2022). Diet fuelling inflammatory bowel diseases: preclinical and clinical concepts. Gut, 71(12), 2574-2586. doi: 10.1136/gutjnl-2021-326575
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- Iannone, L. F., Gómez-Eguílaz, M., & De Caro, C. (2022). Gut microbiota manipulation as an epilepsy treatment. *Neurobiol Dis*, 174, 105897. doi: 10.1016/j.nbd.2022.105897
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Contact: A discussion regarding this assignment is available through Moodle.

Assignment 4: Growth without Growth Hormone

Graduate capabilities assessed in this assignment

This assignment focuses on the following capabilities:

- Using Basic and Clinical Sciences
- Patient Assessment and Management

The report will also be assessed for each of the generic capabilities (Effective Communication, Self-Directed Learning and Critical Evaluation, and Development as a Reflective Practitioner).

Introduction and aims

Growth Hormone (GH), along with other hormones and factors, affects growth and development. There are certain conditions, e.g. obesity, when increased linear growth in childhood occurs in the presence of low GH secretion. The aim of this assignment is to critically evaluate the evidence for effects of obesity on linear growth in children, the mechanisms involved, and how increasing GH secretion may help reduce obesity.

Course themes and related learning activities

This project relates to the course themes of: childhood growth and development and nutrition, growth and body image.

Task description

Your task is to evaluate the evidence supporting this statement: "Growth can occur without sufficient GH secretion in childhood obesity."

Critically evaluate the evidence linking GH with linear growth. Include the following:

1. Describe the role of GH in determining linear growth and metabolism.
2. Discuss how GH secretion is affected by childhood obesity and what other hormones/factors can determine linear growth and, in some cases, lead to increased growth, even without adequate GH secretion.
3. Identify different interventions that increase physiological GH secretion, and discuss the evidence for possible metabolic benefits from GH for managing childhood obesity.

Report requirements

The report should be 2000 words (maximum), including the generic reflective component. Use the references and readings provided as background material and, in addition, source your own references from the literature, internet and print media. You should format your report in accordance with the specification on the Medicine program website (<http://medprogram.med.unsw.edu.au/assignments-and-projects-phase-1>), including a word count on the title page, and follow the APA 7th edition citation guidelines. Please refer to the word count guidelines for penalties that will be applied to reports that exceed the maximum length. <https://medprogram.med.unsw.edu.au/penalties> (login required).

Time Allocation Guide

- | | |
|-----------|--|
| Weeks 1-2 | Read the references listed below and conduct a literature search. |
| Week 3 | Evaluate relevant articles and begin drafting your report in response to each of the tasks. |
| Week 4 | Prepare your report and check if you have addressed all the assessment criteria. |
| Week 5 | Edit the report and proofread. Submit the final version to eMed and Turnitin via Moodle by the due date. |

Assessment Criteria

For a P grade, the written report should meet the following criteria:

Focus Capability 1: Using Basic and Clinical Sciences

- Identifies how GH determines linear growth in children and the effects of GH on fat, glucose and protein metabolism. **(1.1.1 Explains mechanisms that maintain a state of health.)**
- Demonstrates an understanding of how GH secretion is affected by childhood obesity. **(1.1.4 Identifies the components of “basic/medical” science that are necessary to understand a scenario that has not been studied, locates relevant information and interprets the scenario when the relevant information is available.)**
- Demonstrates an understanding of how linear growth can be accelerated without sufficient GH. **(1.1.3 Describes the pathophysiological process of health problems and can explain their basis at the whole person, organ system, cellular and molecular levels.)**

Focus Capability 2: Patient Assessment and Management

- Identifies ways to increase physiological secretion of GH in childhood obesity. **(1.3.8 Applies clinical reasoning to relevant health scenarios, including the identification of key features and clinical patterns.)**
- Describes how childhood obesity could be managed by increasing physiological GH secretion, with reference to the metabolic actions of GH. **(1.3.9 Articulates a general strategy of management, consistent with the pathophysiological model of illness at an elementary level that includes an understanding of foundation principles, e.g. pharmacology.)**

The generic capabilities (Effective Communication, Self-Directed Learning and Critical Evaluation, and Development as a Reflective Practitioner) will be assessed using the generic criteria listed in the Program guide, on the Medicine Program website and in this course guide.

References

- Dimitri, P. (2019). The Impact of Childhood Obesity on Skeletal Health and Development. *J Obes Metab Syndr*, 28(1), 4-17.
https://unsw.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60790021490001731?auth=SAML
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Contact: A discussion regarding this assignment is available through Moodle.

BGDB Group Project 2024

Welcome to this special Phase 1 group project. This is an exciting and unique group project which will bring the research skills that you learnt in MFAC1527: Society and Health course into your group project for the MFAC1522 Beginnings, Growth and Development B course.

Graduate Capabilities assessed in this group project

- Self-directed Learning and Critical Evaluation
- Social and Cultural Aspects of Health and Disease

The report will also be assessed for each of the generic capabilities (Effective communication, Self-directed Learning and Critical Evaluation, and Teamwork).

Background

- In **Society and Health** (SH) you learnt skills in data handling and analysis through a series of QMP lectures and practicals. During the three practicals in the SH course, you carried out a descriptive analysis and basic statistical tests for the formative assessment submitted after your week 6 practical. This analysis will be reviewed and incorporated into the **BGDB** group project as an **appendix** to demonstrate your understanding of the univariate analysis principles learnt during the SH course.
- Further to the statistical skills you have learnt during SH, you will develop an understanding of principles of multivariate analysis from published articles in a high-impact-factor journal, Nature. You will critique an article of your choice with particular regard to the multivariate analysis method(s) utilised in the article. This critique will be written up in the combined style of a literature review and a **peer-review feedback article** to the journal, culminating in the **submission of BGDB project in week 7**.

Aims

- To understand the relevance and interpretation of multivariate analysis methods in analysing complex datasets in a biological and medical setting.
- To introduce you to the research process and develop essential research skills for use in your research in year 4 of the medical program. Specifically:
 - To learn data-handling, basic data analysis and interpretation skills
 - To learn teamwork within a research environment
 - To develop a holistic concept of investigative research and develop skills of writing in an academic setting.

Course themes and related learning activities

This BGDB **Group Project** brings together key elements of the learning expected during the first half of your second year, integrating:

- Epidemiology and basic clinical understanding of various diseases
- The sociocultural elements and public health aspects of the studied article
- Quality of Medical Practice (QMP) research skills: study design, data-handling, data analysis and interpretation.

The project directly relates to the course themes of:

- Socioeconomic determinants of health (SH)
- Health delivery systems (SH)
- Childhood growth and development (BGDB)
- Nutrition, growth and body image (BGDB)

It also relates to the course content of:

- Respiratory disease (SH)
- Immunisation (SH)
- Childhood infection and disease (BGDB)

The specific topics addressed will depend on your **choice** of articles (and multivariate statistical method) from the following list:

1. https://unsw.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60787612110001731?auth=SAML - Fisher discriminant model based on LASSO logistic regression for computed tomography imaging diagnosis of pelvic rhabdomyosarcoma in children [logistic regression]
2. https://unsw.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60787614600001731?auth=SAML - Multivariate linear mixture models for the prediction of febrile seizure risk and recurrence: a prospective case-control study [multivariate linear regression]
3. https://unsw.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60787615610001731?auth=SAML - Estimating direct and indirect genetic effects on offspring phenotypes using genome-wide summary results data [genomic structural equation modelling]
4. https://unsw.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60787617320001731?auth=SAML - Diversity in gut bacterial community of school-age children in Asia [principal component analysis]
5. https://unsw.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60787617900001731?auth=SAML - Dual-attention-based recurrent neural network for hand-foot-mouth disease prediction in Korea [neural network]

The project additionally relates to major **Phase 1 themes of the QMP Element**:

- The project will help you to understand the QMP topics of biostatistics taught in year 1 and the formal QMP lectures across the first half of Year2.
- The QMP medical statistics tutorials available in QMP Moodle are very relevant to the research and analysis elements of the group project.

Note: Some of the Phase 1 expectations for ‘Self-directed Learning and Critical Evaluation’ capability are covered well by this project and may be used in your reflective essay for the Phase 1 Portfolio examination.

Task description

During BGDB, you will continue working in the same project group as you did for your research skills in SH. Your main tasks are to:

1. Complete a literature review on the socio-cultural risk and protective factors relevant to the **topic of your choice** (as selected from the list of five articles offered).
2. Critique the methods and results of the article’s research question(s) and write this up as peer-review feedback for the **BGDB project submission in week 7**.

You will remain in the same 2-3 groups per scenario group that you were in for the Research Skills practical classes in Society & Health course. Each group should choose an article with a different multivariate analysis method so that they may present to the others in the scenario group presentation and compare the methods.

The specific methods provided through the articles are:

- a) Multivariate logistic regression
- b) Multivariate linear regression
- c) Genomic SEM
- d) Principal component analysis
- e) Neural network

You must **register your group project in eMed Registrations** for BGDB as per usual, using the same group members as you were working in for the SH Research Skills practicals. Where there are student enrolment changes you must discuss with your facilitator and confirm group membership changes with Dr Amir Ariff (amir.ariff@unsw.edu.au).

Assessment task

- There is one assessment task for the group project in this BDGB course: the production of a **final report**, presented in the format of a **peer review feedback for journal article submission**, with a teamwork reflective assessment section. This should be submitted by 9:00 am Monday 3 June 2024 (week 7).

However, your **Society & Health** formative analysis must be reviewed, revised and re-submitted as an **appendix** to this report, in order to demonstrate your competency in the full range of statistical tests we have covered.

- Literature research: You will research the background **sociocultural** factors of the article of your choice so that you can interpret and discuss your findings, as well as clearly critique the methods used in your final submission.
- As a research group, you will scrutinise the article's **research questions/hypotheses** and draw conclusions on the relevance and appropriateness of the **statistical methods** used in the study, in particular, multivariate tests.
- We will take you through the research process in weekly group project sessions in weeks 2-6 via **tutorials and the lecture on general multivariate statistics**.

Report requirements

The assessment will be formatted as a peer-review critique appropriate to the journal of submission (in this case, Nature). The format of the review will preserve that of the original article (order of headings and sub-headings), including Abstract, Introduction, Results, Discussion and Methods. An unbiased critique of each section (pros and cons) is expected, with particular emphasis on the Methods section regarding the multivariate analysis performed – some background on the statistical test is required here to provide context for the ‘editor’ who will read your review (the assessor). In this sense, the report will not be strictly a review, but a mix between a peer-review and some literature search on the results and methods of the chosen article.

This **2500-word** maximum report should include:

- A report that comprises a **2000** word ‘journal review’ as outlined above (Note – not included in the word count: abstract, graphs and tables. Graphs and tables are restricted in terms of size and number according to the limits given).
- A **500**-word Teamwork reflective section, which should include:
 - Reflection on the whole teamwork process using the CLeD-EX self and peer evaluations carried out in **BGDB**, your team plans and minutes.
- An appendix (not included in the word count) that includes:
 - The action plans from this evaluation from BGDB with key plans and minutes.
 - A reflection specifically on how you worked in your group for the data analysis element in the SH practicals and whether this translated into improvement in your work as a ‘research team’ in BGDB.
 - Your group project SGS 10 presentation slides as a PPT handout version (4 slides per page layout).
 - A scanned copy of the written assessments provided to you by your facilitator and peers in SGS-10.
 - Reflection on the feedback received from your facilitator and peers in BGDB SGS-10 oral presentation and how this changed your final report.

Time allocation guide

- See the **research summary map** below for the BGDB group project process.
- As a research team, you will need to keep track of your progress, the time available and upcoming deadlines to ensure that you complete each element on time.

Due dates in BGDB

Task	Due date
Registration of group project in eMed	By 4pm Friday 3 May 2024
Group project presentation	SGS 10, Week 6
Submission via eMed – BGDB Group Project	By 9am, Monday 3 June 2024

Assessment criteria

For a P grade, the written report should meet the following criteria:

Focus capability 1: Self-Directed Learning and Critical Evaluation

- Appropriately interprets descriptive and basic statistical results in analysing data and presents these analyses well using clear, self-generated, summary tabulation and graphs. [1.6.5 *Demonstrates an understanding of basic statistical principles and ability in handling and presenting quantitative, and to a lesser degree qualitative, information appropriately.*]
- Critically interprets and succinctly discusses the results of a multiple logistic regression analysis using statistical terminology and in relation to previous research evidence on the topic. [1.6.5 *Demonstrates an understanding of basic statistical principles and ability in handling and presenting quantitative, and to a lesser degree qualitative, information appropriately.*]
- Critiques the quality of the study design and methodology used, referring to possible issues and biases. [1.6.4 *Demonstrates the following skills: appraising the quality and relevance of the information found*]
- Articulates a considered and evidence-based conclusion. [1.6.5 *Demonstrates an understanding of basic statistical principles and ability in handling and presenting quantitative, and to a lesser degree qualitative, information appropriately.*]

Focus capability 2: Social and Cultural Aspects of Health and Disease

- Identifies clear, sensible research questions, and chooses appropriate variables and risk factor(s), providing adequate scope for analysis. Contextualises the results of the studied article in relation to the general population of study. [1.2.1 *Identifies environmental, psychological, social and cultural issues which contribute to health problems in a scenario (e.g. sexuality, stress, family relationships, risky behaviours)*]
- Relates the interpretation of data with methods used to support the hypothesis and explain the findings accordingly in context of the research question [1.2.2 *Explains the mechanisms by which those psychological, social and cultural issues identified affect health; 1.2.5 Understands equity and its implications for health care delivery for individual and population based approaches*]
- Critically analyses and interprets the results of the research in terms of the evidence available utilising knowledge of the health care needs of the study participants, as well as the benefits/ detriments to society. [1.2.3 *Identifies health care needs of different groups in society (e.g. the elderly, indigenous people, immigrant groups and refugees); 1.2.4 Describes and interprets patterns of illness including use of basic statistical and epidemiological concepts*]

The generic capabilities (Effective Communication, Self-Directed Learning and Critical Evaluation, and Teamwork) will be assessed using the generic criteria listed in the Program guide.

In addition, for the generic capability of Effective Communication

- Presents a report that is accurately, succinctly and competently written in the structure and format of a research manuscript as described in the assessment instructions.

Advice and Contacts

- Dr Amir Ariff (QMP convenor) is the contact for this project. Dr Jessica Macer-Wright is the contact in Port Macquarie, and Dr Shanzana Khan is the contact in Wagga Wagga. Non-urgent questions should be directed to QMP tutors in the weekly sessions.

QMP Statistical Support

- All the resources you require will be made available to you via BGDB and QMP Moodle sites.
- As Year 2 students, you should revise the previously completed **QMP Statistics Online Resources** on statistical testing and significance etc.

Accessing SPSS and other statistical software

- It is **not mandatory** to replicate the statistical methods outlined in your article of choice. However, should your group decide to do so on a preliminary basis, to better understand the methods, you may choose to use the software outlined in the methods section of the article.
- This may include IBM SPSS (which requires university subscription to access), or some form of freeware software e.g. R (which can be accessed via the software's official website).
- The current version of IBM SPSS statistical program (v.26) is available via myAccess. This is the UNSW 'virtual desktop'. This will allow you to access SPSS anywhere, via an Internet browser link. See UNSW myAccess for further information: <https://www.myaccess.unsw.edu.au/>.

Teamwork and Attendance

All members of the group **must take part in the weekly data analysis**, as you will learn more AND it is preparation for your Year 4 research project. Everyone working together through ALL the timetabled group project sessions increases the likelihood of understanding the data. Dividing up the work should be avoided, as misunderstandings re the data and your research questions can occur if individuals miss group project practicals.

We will be monitoring and recording your team members' attendance and your groupwork in the face-to-face weekly tutorials. If you are not attending for any reason or are having connection difficulties, you must send a message to Dr Amir Ariff (amir.ariff@unsw.edu.au) or via MS Teams chat. (Port Macquarie students please contact Dr Macer-Wright, and Wagga Wagga students please contact Dr Shanzana Khan).

1. You will find that MS Teams is excellent for facilitating your research and teamwork, which you may choose to utilise outside the scheduled sessions. You can use the meetings function in your channel whenever you want to meet and share screens, docs and record and take minute notes in the channel.
2. You can personalise this space with the available apps. For example, we suggest that you choose a useful time management or planner/scheduling app to assist with your project management. You can also use this to provide evidence of your teamwork.
3. We suggest that you store everything in the MS Teams channel but back up on your own computers when you have made major changes to files or data or completed important analysis steps.
4. Use the sessions to get direct feedback from the tutors and to learn tips and methods of analysis and interpretation.

The knowledge and skills that you gain here will be assessed in the end of course examination in BGDB and in other Phase 1 courses and will be invaluable in your Year 4 research project.

Summary of Learning Activities and Assessment Deadlines in BGDB

2024 MAP of 2nd year Research Skills & Group Project: BGDB									
COURSE	BGDB - Group Project								
WEEK	week 1	week 2	week 3	week 4	week 5			week 6	week 7
ACTIVITY	Lecture 1 online Research Skills Part 1&2	Group Project 1 - Intro to Multivariate Analysis Practical	Group Project 2 – Analysis1 Topic Selection	Group Project 3 – Analysis2 Multivariate Analysis	Lecture 2 online Research Skills Part 2	Group Project 4 – Analysis3 Biological Context	SG group project presentation	Group Project 5 - 'Bringing it all together' Practical	Final edit & submission
	Multivariate Analysis	Research Questions & Multivariate Analysis of the Dataset			Data Interpretation & Discussion	Discussion & Writing the Report			
OBJECTIVE	Basics of Multivariate Regression and decide on research article			Conceptual understanding of statistical tests	Interpretation & Discussion	Interpret statistical findings in a biological context	Present your project to peers	Discuss findings & finalise writeup	
	Complete Lecture parts 1&2 online. Read through the Logistic Regression Analysis Instructions Manual. Review formative analysis feedback and revise as needed. Start lit review	Learn basics of multivariate regression analysis. Continue researching literature review.	Finalise research question. Interpret multivariate analysis. Continue lit review. Start planning & writing the report.	Continue Interpreting multivariate analysis. Write up descriptive analysis.	Review of bias and research implications. Tips for interpretation of your data and writing of the discussion.	Continue Interpreting multivariate analysis and biological context. Write up review in format, in particular Abstract, Introduction, Results, and Methods sections.	This presentation will help in writing your final report. The ppt and teamwork SG forms must be appended to your report.	Finalise the results and tables. Finalise Discussion and Conclusion. Format whole report, check citations, references, and appendices.	
QMP MOODLE ONLINE RESOURCES	Online lecture - tutorial/slideshow - in 2 parts. Access GP documents - instructions>> Advice on lit research	As for S&H, PLUS Logistic regression analysis Instructions (pdf and ebook), Logistic regression slideshow and SPSS "How to" videos. Weekly tip sheets.			Lecture link, recording and handout	Logistic Regression Analysis Instructions (PDF and ebook) and resources, Logistic regression slideshow and SPSS "How to" videos. Finalising your Report instructions. Weekly tip sheets.			
TEAMWORK	Review individual plans plus also assess any issues as group re teamwork	Discuss group and plan roles/teamwork.	Check individual plans and how you are going with this. Make notes, record your teamwork.	2nd Self-evaluation and peer evaluation before the SG next week.	Review teamwork feedback analysis process at beginning of week 5.	Ensure everyone comes to this session!	Teamwork analysis and individual/group change to be presented in SG.	Review teamwork and individual collaborative evaluations and draft teamwork section.	Finalise teamwork section AS A GROUP and add to the report.
FEEDBACK	SH Formative feedback returned via SH Moodle	Weekly Tip Sheet, Tutors & Discussion Board	Weekly Tip Sheet, Tutors & Discussion Board	Weekly Tip Sheet, Tutors & Discussion Board	Weekly Tip Sheet, Tutors & Discussion Board	Weekly Tip Sheet, Tutors & Discussion Board	SG Feedback Forms	Weekly Tip Sheet, Tutors & Discussion Board	Final queries to QMP Moodle discussion board
SUBMISSION DEADLINES							Group Project Presentation		Submit group project to eMed 9am Mon

Useful References, Resources and Web-links

The following resources may be useful for helping contextualise the SH portion of your submission, which should be submitted as an appendix to the BGDB report:

Original Survey, Indonesia 2017

National Population and Family Planning Board - BKKBN, Statistics Indonesia - BPS, Ministry of Health - Kemenkes, and ICF. 2018. Indonesia Demographic and Health Survey 2017. Jakarta, Indonesia: BKKBN, BPS, Kemenkes, and ICF. Retrieved from:
<https://dhsprogram.com/publications/publication-fr342-dhs-final-reports.cfm>

Demographic Health Survey Program – main website: <https://dhsprogram.com/>

Further information about the DHS survey topics here: <https://dhsprogram.com/what-we-do/survey/survey-display-522.cfm>

The following resources may be useful for the group research component and write-up of your BGDB report:

Nature magazine: <https://www.nature.com/>

Formatting for a Nature publication: <https://www.nature.com/nature/for-authors/formatting-guide>

The selected articles can be found:

6. https://unsw.ama.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60787612110001731?auth=SAML - Fisher discriminant model based on LASSO logistic regression for computed tomography imaging diagnosis of pelvic rhabdomyosarcoma in children [logistic regression]
7. https://unsw.ama.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60787614600001731?auth=SAML - Multivariate linear mixture models for the prediction of febrile seizure risk and recurrence: a prospective case-control study [multivariate linear regression]
8. https://unsw.ama.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60787615610001731?auth=SAML - Estimating direct and indirect genetic effects on offspring phenotypes using genome-wide summary results data [genomic structural equation modelling]
9. https://unsw.ama.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60787617320001731?auth=SAML - Diversity in gut bacterial community of school-age children in Asia [principal component analysis]
10. https://unsw.ama.exlibrisgroup.com/leganto/public/61UNSW_INST/citation/60787617900001731?auth=SAML - Dual-attention-based recurrent neural network for hand-foot-mouth disease prediction in Korea [neural network]