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1 neuromuscular performance

1.1 introduction

Neuromuscular performance can be regarded as the ability of the neuromuscular system to functionally control and drive movements by an appropriate integration, coordination and use of sensory feedback, reflex activity, central

motor drive, muscle recruitment pattern, muscular excitation-contraction coupling, and energy availability. A well-developed capacity of the neuromuscular system is highly relevant for fitness, sports, and health during the whole lifespan.

the appropriate development of the neuromuscular capacity supports the acquisition of basic movement and motor skills and, thus, contributes to sports competency.

Proper neuromuscular performance development may lead children and adolescents into an active and healthy lifestyle. Furthermore, the capacity of the neuromuscular system is fundamental to achieve peak sports performance in late adolescence and young adulthood. During later stages of life, a well-trained neuromuscular capacity enables people to stay active and healthy as well as maintaining the ability to fulfill the job requirements.

1.2 Working

Although the relevance of neuromuscular performance is widely recognized, there is a large diversity in assessment methods, cross-sectional associations between relevant outcome measures and potentially efficacious exercise interventions. The aerobic capacity or muscular strength are very similarly assessed from childhood to older age, for instance, by conducting a VO₂max or one-repetition maximum test, respectively, there is no such uniform assessment method for neuromuscular performance measures. A valid comparison of neuromuscular performance during different stages of the lifespan is challenging and remains difficult.

1.3 purposes

Purposes of measuring neuromuscular performance capacities

To assist in diagnosis of medical conditions and the nature of movement dysfunctions. To reassess status in order to determine the effectiveness of a program designed to change the amount of the variable. To motivate persons to comply with treatment or training regimes. To document status and the results of treatment or training and to communicate with other involved persons. To assist in ergonomically designed furniture, equipment, techniques, and environments. To provide information to combine with other measures of human performance to predict functional capabilities.

2 genetic analysis

2.1 introduction

Genetic analysis is the overall process of studying in fields of science that involves genetics and molecular biology. The base system of analysis revolves around general genetics. Basic studies include identification of genes and inherited disorder. Genetic analysis may be done to identify genetic/inherited disorders and also to make a differential diagnosis in certain somatic diseases such as cancer. Genetic analyses of cancer include detection of mutation, fusion genes and DNA copy number changes. Modern genetic analysis began in the mid-1800s with research conducted by Gregor Mendel. Mendel, who is known as the "father of modern genetics", was inspired to study variation in plants.

2.2 mendelian experiment

Mendel cultivated and tested some 29,000 pea plants (i.e., *Pisum sativum*). This study showed that one in four pea plants had purebred recessive alleles, two out of four were hybrid and one out of four were purebred dominant. His experiments led him to make two generalizations, the Law of Segregation and the Law of Independent Assortment, Known as Mendel's law of inheritance.

2.3 type of genetic analysis

DNA SEQUENCING This was first discovered during 1970s. it is and essential to the application of genetic analysis. The process is to determine the order of nucleotide bases. DNA sequencing encompasses biochemical methods for determining the order of the nucleotide bases, By generating a DNA sequence for a particular organism, you are determining the patterns that make up genetic traits and in some cases behaviours. The advent of DNA sequencing has significantly accelerated biological research and discovery.

CYTOGENETICS Cytogenetics is a branch of genetics that is concerned with the study of the structure and function of the cell, especially the chromosomes. Because of the close analysis of chromosomes in cytogenetics, abnormalities are more readily seen and diagnosed.

KARYOTYPING A karyotype is the number and appearance of chromosomes in the nucleus of a eukaryotic cell. The term is also used for the complete set of chromosomes in

a species, or an individual organism Karyotyping uses a system of studying chromosomes to identify genetic abnormalities and evolutionary changes in the past. DNA MICROARRAYS A DNA microarray is a collection of microscopic DNA spots attached to a solid surface. This is used to measure the expression levels of large numbers of genes, when gene is expressed it generates mRNA which can be detected by the microarrays. Therefore, arrays have dramatically accelerated many types of investigations. PCR The polymerase chain reaction (PCR) is a biochemical technology in molecular biology to amplify a single or a few copies of a piece of DNA across several orders of magnitude, generating thousands to millions of copies of a particular DNA sequence These include DNA cloning for sequencing, DNA-based phylogeny, or functional analysis of genes, etc.

2.4 possibilities

This research has been able to identify the concepts of genetic mutations, fusion genes and changes in DNA copy numbers Reverse genetics uses the methods to determine what is missing in a genetic code or what can be added to change that code. Genetic linkage studies analyze the spatial arrangements of genes and chromosomes .

3 cellulite reduction

3.1 introduction

The uneven , lumpy skin are sign of cellulite. Cellulite occurs when the skin overlying certain areas of fat is pulled down ward to the deeper tissues by connective tissue bands . Cellulites are commonly found on : Hips, thighs, abdomen, buttocks, breasts Cellulites are found more in women than men due to different aft, muscle , and connective tissue distribution . cellulites are not harmful tho.

3.2 causes

WHAT CAUSES CELLULITE Cellulite is caused by the build up of fat underneath the skin. The amount of cellulite person has depends on genes , body fat , percentage and age . the thickness can also play a major role

in appearance of the cellulite on persons body. SOME MAJOR CAUSES OF CELLULITE Hormones, poor diet, accumulated toxins, genetics, weight gains, pregnancy, inactivity, an unhealthy lifestyle .

3.3 procedures

CRYOLIPOLYSIS Cryolipolysis is a non invasive procedure the helps remove cellulite by freezing the fat cells beneath the skin which causes the fat cells to rupture and their content is absorbed by the body. It may take up to three to four month to see a noticeable reduction of cellulite. **ULTRASOUND** Ultrasound is non invasive procedure that uses sound waves to target and eliminate fat from abdomen and thighs. The results may take upto two or three months. **ACOUSTIC WAVE THERAPY** The treatment was developed to reduce cellulite .it works by working the connective tissues in the areas of the body prone to cellulite this helps in stimulate and increase collagen production , improving the appearance , texture and elasticity of the skin. **HOME REMEDIES FOR REDUCING CELLULITE EXERCISE** Exercise can help you reduce body fat, which makes cellulite less noticeable . it helps to burn the body fat and body feels more toned, smooth and firmer **COFFEE GROUNDS** Coffee ground act as a exfoliator on skin and helps remove the dead skin cells and tighten the skin while promoting new cell growth. **DRY BRUSHING** This technique is said to stimulate blood and lymph flow , remove dead skin cells, and support detoxification and stimulate nervous system . This is best done before bath or shower

4 acne treatment light

4.1 introduction

Visible light therapy is used to treat mild to moderate acne outbreaks. Blue light therapy and red light therapy are both types of phototherapy. This therapy is easy to access through dermatology clinic or even products are available got home treatment Phototherapy is immensely effective for treating the acne lesions specially ones that are caused by inflammation or bacteria.

4.2 benefits

Benefits of light therapy There are two main kinds of visible light therapy used in clinical settings: blue light and red light. Each has a specific use, and, while they both help acne, each has different benefits.

Blue light It is the type of light therapy most commonly used to address acne breakouts. The wavelength of blue light has an antimicrobial effect, making it effective at killing several types of bacteria that can collect in your pores and oil glands and cause breakouts. Blue light therapy also helps condition your skin, getting rid of free radicals that oxidize and age your face. The treatment also has anti-inflammatory benefits, which decreases other symptoms of acne, such as redness.

Red light therapy Red light therapy doesn't have the same antibacterial effects of blue light therapy, but it can still be effective. Red light therapy helps promote healing and may work to decrease the visibility of acne scarring. It also has anti-inflammatory capabilities. Red light therapy works deep below the surface of your skin to help soothe and repair tissue. If your acne is caused by a chronic skin condition, red light therapy might be the choice for you.

4.3 sideeffects

Blue light therapy and red light therapy are generally considered safe, but there are some side effects. Redness, bruising, skin peeling, mild pain or irritation. Less often, other side effects develop as a result of this treatment. Rare side effects include: • dried pus or blistering at the site of treatment • burns • dark pigmentation as a result of overexposure to the sun after treatment • severe pain at the site of treatment

4.4 Risks

RISKS: If the treated area isn't cared for properly, there's a chance for infection. If you notice pus, blistering, or develop a fever after light therapy, There are also people who should avoid light therapy. Extremely sensitive to sunlight, Someone who's is on antibiotics .

5 infant warmer

5.1 introduction

These devices are commonly used to provide thermal support for newborns in the delivery suite, for critically ill infants who require constant nursing intervention, and for infants undergoing treatment that prolongs exposure to a cool environment. Prolonged cold stress can overwork heat producing mechanisms, drain energy reserves, and result in hypoxia, acidosis, hypoglycemia, and, in severe cases, death

5.2 operate

A heating element generates a significant amount of radiant energy in the far IR wavelength region. The radiant output of the heating unit is also limited to prevent thermal damage to the infant. The IR energy is readily absorbed by the infant's skin; increased blood flow in the skin then transfers heat to the rest of the body by blood convection. Infant radiant warmers are overhead heating units. They typically consist of a heat source, a skin-temperature sensor, an automatic (servo) control unit, and visual and audible alarms. After birth, infants are placed under a radiant warmer until they can achieve thermoregulation.

5.3 Uses

User(s): Nursing staff; physicians
Maintenance: Medical staff; technician; biomedical or clinical engineer
Training: Initial training by manufacturer and manuals

5.4 Risks

Accidental overheating of a newborn under an infant radiant warmer.

5.5 suitability

The device uses less power at startup and during operation compared to other radiant warmers. It is designed for infection control (e.g. non-stitch

biocompatible mattress for no infections in stitches plus no need for a mattress cover). It has a faster warmup time for high volume environments with little pre-warming. Over 1500 warmers have been deployed in lower resource settings. The device has been designed, developed and manufactured in India based on extensive customer input in India and similar countries. It has been adopted in Tier 2 and 3 towns in India, as well throughout the country of Myanmar by the Ministry of Health. Testing of the device includes protocols that try to simulate low-resource setting issues such as voltage fluctuations, high humidity etc.