

English as a Global Language in Science and Technology

- The prevalence of English as not only the *lingua franca*, but as an important transmission medium of scientific knowledge in our time compels the professionals in all spheres of science and technology to render their research results in English in order to be understood and acknowledged, and ultimately to succeed in the wider English-speaking world.
- In order to achieve this, it is necessary to acquire the so-called "academic literacy" in the English language.
- Therefore, PhD students are expected to be not only fluent in English, but also well-versed in the academic style and standards of the Englishlanguage.

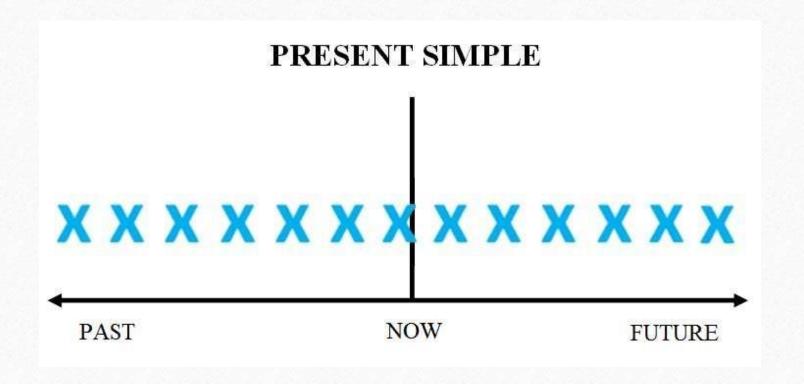
In this lecture, we will:

- Revise the verb tenses in the English language.
- Discuss the most relevant English grammar phenomena in terms of their prevalence in written and spoken medical discourse.
- Analyze the samples of medical discourse from *PubMed* database.
- Practice in using verb tenses for different communicative situations.

The Present Tenses:

- Present Simple (Indefinite)
- Present Continuous (Progressive)
- Present Perfect
- Present Perfect Continuous

The **Present Simple** tense describes general truths, repeated actions and routines (e.g. daily activities and habits).



• It is called "simple" because its basic form consists of a single word – the infinitive without the particle "to" (bare infinitive):

Singular:

1 st person	I <u>teach</u> medical students.
2 nd person	You <u>teach</u> foreign students.
3 rd person	She writes two reports every week.
	He <u>studies</u> immune reactions.
	Dr. Smith <u>teaches</u> endocrinology.

Plural:

1st person	We <u>teach</u> medical students to diagnose
	carefully.
2 nd person	You both write English well.
3 rd person	They study dentistry at the Academy.
	Helen and John <u>teach</u> medical students in Year 1.

NB! When the subject is the 3rd person singular (**he**, **she**, **it** or their **equivalents**: "the student", "the doctor", "the nurse", "Mary", "Prof. Smith", "treatment", "blood pressure" etc.):

1) add "s" to the end

E.g.: write > writes, run > runs, see > sees, play > plays, train > trains.

2) add "es" to the end when the base form ends in the vowel "o"

E.g.: go > goes, do > does

or if it has a sibilant sound: -ss, ch, x, tch, sh, zz

E.g.: teach > **teaches**, watch > **watches**, guess > **guesses**, mix > **mixes**

3) change the final "y" to "<u>-ies</u>" after a consonant + y

E.g.: study > studies, worry > worries, carry > carries, fly > flies)

Examples:

- > She **speaks** English fluently.
- Treatment of diabetes <u>includes</u> control of blood glucose levels.
- The right ventricle **<u>pumps</u>** deoxygenated blood into pulmonary circulation.
- Prof. Johnson <u>delivers</u> lectures in clinical neurology.
- > She <u>teaches</u> medical students.
- > John always watches the patient's reaction to treatment.
- This elderly person <u>catches</u> a cold every winter.
- > Jane **studies** Ukrainian.
- ➤ He **modifies** the treatment after one week.
- This equipment **purifies** the water.

The Present Simple tense describes:

- Something that happens all the time or repeatedly:

Nurses **take** care of patients. Oral hygienists **provide** information about dental care. Endocrinologists **treat** diabetes and thyroid and pituitary gland diseases.

- A fact or something that is true or generally accepted:
- •Water **boils** at 100 °C.
- •Sugar dissolves in water.
- •Cigarettes cause lung cancer.
- A permanent or long-lasting situation:
- •I work as an endocrinologist in the diabetes program of our hospital.
- •I **teach** surgery at Medical Academy.
- •I **deliver** practical classes in biochemistry.

 Frequency of action with such adverbs as "always", "often", "sometimes", "rarely", "never", "every week", "twice a year":
- •I **begin** to operate at 8.30 every morning.
- •Dr. Taylor **does** endodontics two times a week.
- •We **visit** the dentist twice a year.
- Timetables and schedules:
- •The train **arrives** at 5 o'clock every day.
- •The conference **starts** tomorrow at 9.30 (describing the future situations)

Verb "to be" – the Present Simple Tense:

Singular:

1 st person	I <u>am</u> a teacher.
2 nd person	You <u>are</u> the doctor.
3 rd person	John <u>is</u> a medical student from the USA.
	He <u>is</u> in his second year at the Academy.
	This lady <u>is</u> a long-term patient. She <u>is</u> in the
	geriatric ward.

Plural:

1st person	We <u>are</u> researchers.
2 nd person	You <u>are</u> experienced teachers.
3 rd person	They <u>are</u> good doctors but still inexperienced.
	John and Helen <u>are</u> dental students.

Verb "to have" – the Present Singular: Simple Tense:

Plural:

1 st person	We <u>have</u> three patients with the same symptoms.
2 nd person	You <u>have</u> no cause to worry.
3 rd person	They <u>have</u> two patients in the surgical ward.
	James and Laura <u>have</u> the same genetic disorder.
	These parents <u>have</u> concerns about their
	daughter's behaviour.

PRESENT SIMPLE TENSE: NEGATIVE FORM

I We You They	do not		at the
He		work	at the
She			hospital.
It	does not		
(the doctor, the nurse,			
etc.)			

Examples:

- ➤ I am not the only English speaker in my department.
- ➤ I do not take this medication.
- > John **is not** the only patient reporting these symptoms.
- ➤ He has no difficulty with medical Latin.
- Anna does not have Alzheimer's disease.
- > She does not have another appointment with the specialist.
- This lady **is not** allergic to anything.
- My brother **does not** study at the university.
- ➤ It **is not** the same result.
- > That alternative treatment **does not have** a different result.
- ➤ We do not have any patients with the same symptoms.
- You **do not have any** cause to worry.
- > They do not have good results with this medicine.
- > James and Laura do not have the same symptoms.

NB! In spoken and informal written English, contracted forms "don't", "doesn't" are used.

Contextual use in academic writing

- The present simple tense is generally used in the opening sections ("Background" or "Introduction") of research articles and medical case reports, as well as in the "Discussion" section:
- "Tetanus rarely <u>occurs</u> in developed countries, but it <u>results</u> in fatal complications including respiratory failure due to generalized muscle spasms".
- "Diabetes mellitus <u>is</u> a group of diseases associated with various metabolic disorders, the main feature of which <u>is</u> chronic hyperglycemia due to insufficient insulin action. Its pathogenesis <u>involves</u> both genetic and environmental factors. The long-term persistence of metabolic disorders <u>causes</u> susceptibility to specific complications and also <u>fosters</u> arteriosclerosis".
- "Table 1 above <u>demonstrates</u> the success of cloning in various animal species. Figure 2 below <u>shows</u> methylation in mouse 2-cell embryos".

Reporting Verbs

- Reporting verbs are widely used for paraphrasing, writing reviews, and citing information from other sources.
- E.g.: The author acknowledges, adds, advocates, affirms, agrees, alleges, analyses, argues, asserts, assures, believes, claims, comments, concludes, confirms, contends, describes, discusses, emphasizes, explains, expresses, identifies, indicates, maintains, mentions, observes, points out, questions, remarks, reports, states, underscores, etc.

Communication Tasks:

- 1. Speak about your profession and job. What do you do? Describe your working day and daily routine to the class. Try using some of these adverbs of frequency: always, usually, frequently, normally, often, regularly, sometimes.
- 2. Using the information from your partner's description, introduce him/her to the rest of the class: describe his/her profession and daily routine.
- 3. Speak about your profession and job. Describe to the class what you never or hardly ever do in your daily routine. Try using some of these adverbs: hardly ever, infrequently, never, occasionally, rarely, seldom.
- 4. Using the information from your partner, describe to the class what he/she never or hardly ever does in their daily routine.

Communication Tasks:

• 5. Describe the mechanism of human heart using the image given below.

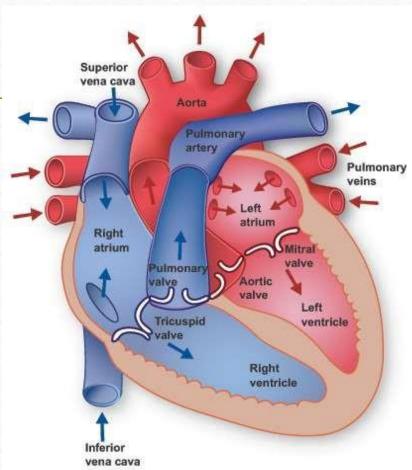
These notes may be of help:

Venous blood enters / flows / goes ...

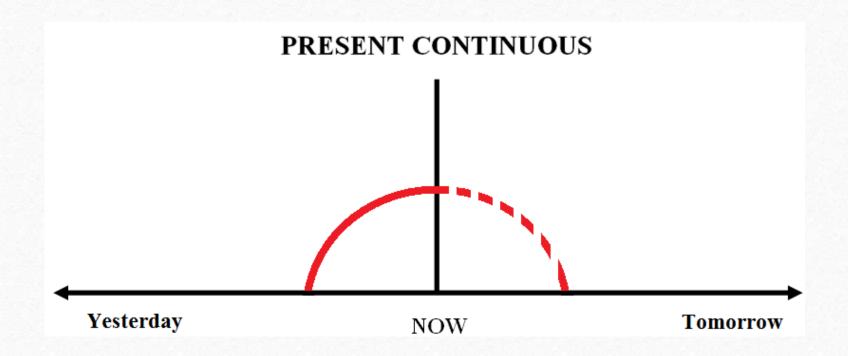
• Then it passes through ... to ...

- The left atrium receives ... from ...
- Newly oxygenated blood flows into...
- The heart pumps oxygenated blood into...

... and deoxygenated blood ...

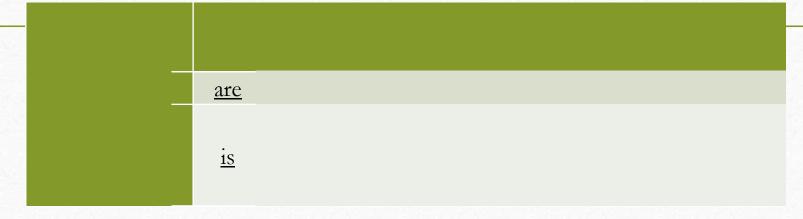


The **Present Continuous (Progressive)** tense describes an action that is happening now (i.e. at the time of speaking / writing / reporting).



Formation: present tense of "to be" (auxiliary verb) + "ing" form of the main verb

Singular:



Plural:

We		driving to the hospital right now.
You all		listening to me now.
Students	<u>are</u>	writing down the new grammar material at the
They		moment.
		going to the operating room right now.

Present Continuous can be used to describe:

- 1. Something happening near the time of speaking:
- •I am writing a detailed article on brain tumours. I'll show it to you.
- 2. Something happening for a limited time in the present (today, this week, this year):
- The students are working long hours this term.
- 3. Changing situations and in a narration / commentary:
- The patient is getting better with the new treatment.
- •His blood pressure is rising very fast.
- •The anaesthetist is continually checking the patient's lung function.
- 4. A future event [the other words in the statement explain the time aspects]:
- •We <u>are stenting</u> a renal artery on Monday.
- •I am having dinner with a medical representative tomorrow.
- 5. A future event using the **"going to"** construction: Formation: **present continuous** of **"to go"** + the **bare infinitive** of the main verb:
- •I am going to attend the cardiology conference next month.
- •There is a course in Boston next autumn. Are you going to attend it?
- •Her condition is improving, I think we are going to discharge her soon.
- This patient is going to recover quickly.

Contextual use in academic writing

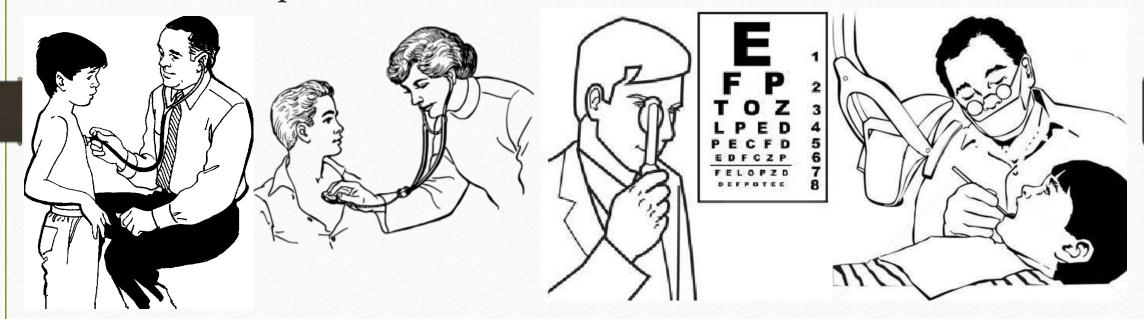
- The Present Continuous tense describes a changing situation or an action that is happening near the time of reporting:
- "...we are reporting this case with the aim of drawing attention to this undocumented occurrence, which remains under investigation".
- "To the best of our knowledge, we <u>are reporting</u> the first case of Eumycetoma caused by P. romeroi in a renal transplant recipient".
- "The injury we <u>are dealing with</u> seems to have been the result of a ricocheting bullet".
- "...the possibility that we <u>are dealing with</u> a Lynch 2 syndrome remains at the front of our minds".
- "...we are monitoring her every month at our out-patient clinic".
- Approximately 50% of tetanus cases in the USA occur after injuries, but intravenous drug use **is becoming** increasingly significant.

Communication Tasks:

- 1. Using the Present Continuous tense, talk about your current work and projects. What are you doing at the present time? (e.g., writing a PhD thesis or a research paper, preparing materials for a conference, etc.).
- 2. Using the information from your partner's description, describe his/her current projects.
- 3. Using the Present Continuous tense, ask your partner some questions as to his/her current projects. Use the example questions:
- Why are you doing this project?
- What are you currently working on?
- When are you going to finish it?
- Where are you conducting the study?
- Who is supervising your research? etc.

Communication Tasks:

• 4. Describe the activities in the pictures given below using Present Continuous tense. What are these people doing? Compare and contrast the pictures.



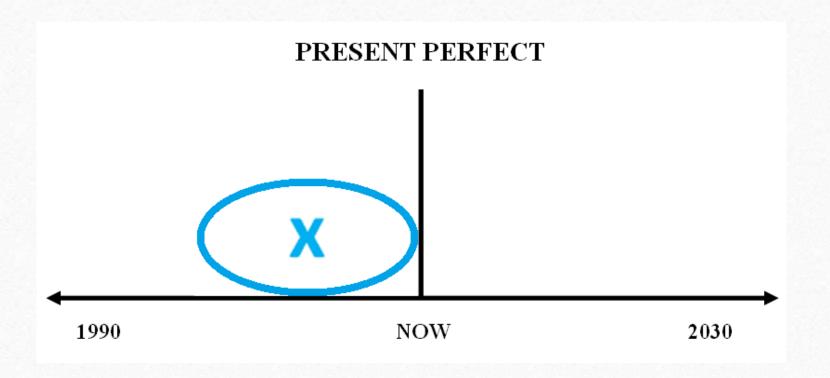
Picture 1

Picture 2

Picture 3

Picture 4

The **Present Perfect** is used to describe the result of an action in the past which has a connection to the present.



Formation: Have/has + past participle of the verb

- **Regular verbs**: verb + ending "-ed" e.g., "examine examined":
- I <u>have</u> already <u>examined</u> this patient.

- *Irregular verbs*: e.g., "write written" (see the **Past Participle** column in **APPENDIX 3**):
- He has just written the prescription.

Present Perfect is used:

To talk about a recent happening:

- •"Just" (i.e., a short time ago) to say something has happened a short time ago: Dr. Smith <u>has</u> just <u>arrived</u> at the hospital.
- "Already" to say that something has happened sooner than expected: The second-year resident <u>has</u> already <u>finished</u> her project presentation.

To describe a period of time that continues up to the present (an unfinished period of time), using the expressions: today, this morning, this evening, this week...: I <u>have attended</u> to ten patients today. Dr. Smith <u>has operated</u> on four patients this week.

To express something that we are expecting. In this situation we use "yet" to show that the speaker is expecting something to happen, but only in <u>questions</u> and <u>negative</u> sentences: Dr. White <u>has not arrived</u> yet. We use "ever" and "never" to express something you have never done: I <u>have</u> never <u>seen</u> a patient with Wilson's disease. It is the most interesting case that I <u>have</u> ever <u>seen</u>. I <u>have</u> never <u>worked</u> with a CT scanner. To ask about the frequency of events: How many times <u>have</u> you <u>broken</u> your arm? How often <u>have</u> you <u>visited</u> your dentist this year?

Contextual use in academic writing

- The present perfect tense is used to render the author's reflections on the problem in a broader context (for instance, referring to previous studies and reporting the results of other researches):
- "There <u>have been</u> a number of previous reports of CVC malpositioning in the internal mammary vein".
- "Other studies <u>have demonstrated</u> the ability of ablation to prevent recurrence of VF in patients with a structurally normal heart, but these studies also <u>have</u> <u>been</u> of small patient cohorts followed only for a few years".

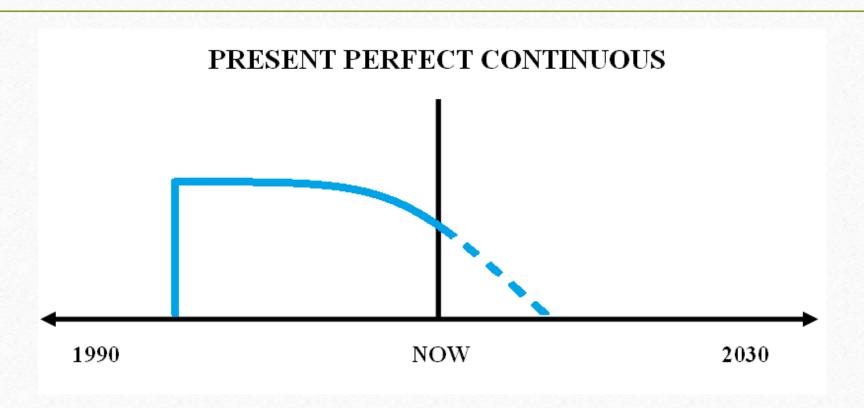
Contextual use in academic writing

- "Later prospective studies <u>have proved</u> that lowering this trigger to $10 \times 109/L$ in stable patients with cancer or blood disorders is still safe".
- "Some case reports <u>have described</u> platelet normalization shortly after starting antibiotic therapy without a need for platelet transfusion".
- "Other authors <u>have noted</u> that the latency period ranges from 3.5 to 33 years (median 10 years)".

Communication Tasks:

- 1. Tell your groupmates about your life experiences. What have you done in your life so far?
 - Something new in the field of medicine you've learned from the Internet.
 - The most difficult medical or scientific procedure you've ever tried.
 - The most interesting medical case you've ever worked with.
 - The most useful scientific paper you've ever read.
 - A job you've done more than once.
- 2. Work in pairs. Ask your partner about his/her life experiences. Use the questions given below:
 - Have you ever published research papers in English?
 - Have you ever attended a conference abroad?
 - Have you ever studied German?
 - Have you ever delivered practical sessions in Surgery?
 - Have you ever spoken in front of a large audience?

The **Present Perfect Continuous** shows an action that began in the past and has gone on up to the present time or has just stopped



Formation:

Have/has been + present participle of the verb (verb + -ing ending)

- How long <u>have</u> you <u>been working</u> as a dentist? I <u>have been working</u> as a dentist *since* 1998.
- He <u>has been</u> <u>studying</u> MR imaging *for* three months.
- You look tired. Have you been studying? Yes, I have been studying the new clinical case.

Contextual use in academic writing

- The Present Perfect Continuous is used in the "Introduction" section to refer to an action that began in the past and has gone on up to the present time:
- "Since March 2009, we <u>have been using</u> single-port laparoscopic cholecystectomies in selected patients with benign gallbladder diseases".
- "In our Institute we <u>have been treating</u> giant hydatid cysts of the lung for 15 years, but never more than 20 cm in diameter".
- Sometimes it is used in the "Acknowledgements" sections:
- We <u>have been using</u> laboratory facilities at the Institution for Strategic Studies and Scientific Research, and we give special thanks to Dr Pola Khanaqa for creating an excellent research environment.

Communication Tasks:

- Tell about your research project. How long have you been studying this problem?
- How long have you been studying English?
- How long have you been working as a doctor/dentist?
- How long have you been teaching English speaking students?
- Tell about something that you have been doing for more than 2 years.