



# UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO

## ESCUELA NACIONAL PREPARATORIA

Ciclo escolar 2021 - 2022



### Título de Ponencia: Inglés VI en Biología V: Infografía sobre un texto en inglés

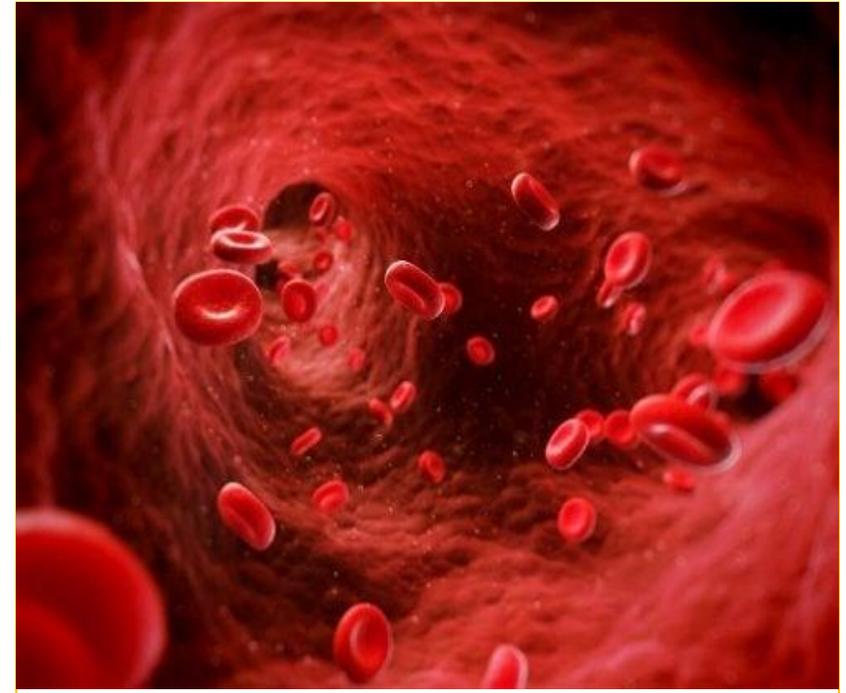
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Colegios de Biología e Inglés:





## LA SECUENCIA DIDÁCTICA **INGLÉS VI y BIOLOGÍA V** **INFOGRAFÍA SOBRE UN TEXTO EN INGLÉS** BUSCA DESARROLLAR:

- **MULTIDISCIPLINARIEDAD, Unidad 2 de Inglés VI y la Unidad 1 de Biología V**
- **TRANSVERSALIDAD,**
- **LECTO ESCRITURA,**
- **USO DE TIC,**
- **CONOCIMIENTO DE UNA LENGUA EXTRANJERA,**
- **BÚSQUEDA Y RECUPERACIÓN DE INFORMACIÓN EN LA RED,**
- **TRABAJO EN EQUIPO Y COLABORATIVO Y**
- **TRABAJO POR PROYECTOS (ABP).**





## PROCEDIMIENTO:

1. Los estudiantes en equipos buscaron un texto en inglés sobre el tema "Erythropoietin" del Programa de Biología V. Unidad 1.
2. De acuerdo al texto en la infografía explicaron
  - a. cómo funciona
  - b. cómo se produce
  - c. sus consecuencias
  - d. pruebas o exámenes para detectarla
3. El producto final fue la elaboración, en inglés y en equipos, de una infografía.
4. Los instrumentos de evaluación fueron dos listas de cotejo: una para evaluar la infografía y otra para la presentación oral de la misma.

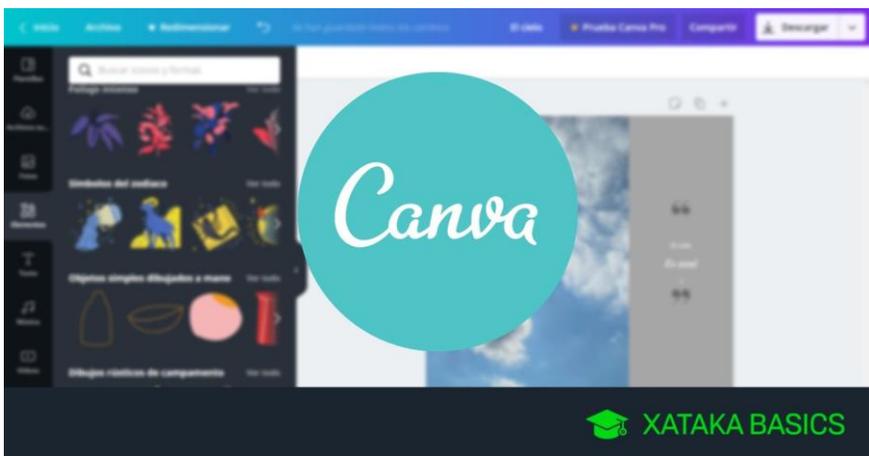




Programa Institucional  
Ciclo escolar 2021-2022  
del 23 al 25 de febrero



# TICs UTILIZADAS:





## VENTAJAS DEL USO DE LAS TICs: (1)

- La búsqueda de información fue rápida.
- La página que utilizamos para elaborar la infografía era fácil de usar.
- One of the advantages was that we already knew how Canva works and it is not very complicated.
- Another advantage was that all of us could see each other's modifications.
- They are fast and useful.
- They facilitate the organization of work.





## VENTAJAS DEL USO DE LAS TICs: (2)

- TICs facilitates teamwork since it can be better organized.
- You learn new ways of working.
- I really like how we can all work connected, that speeds up teamwork
- We had a fast and really good communication.
- We also could find the articles we wanted.
- We learned a lot about Erythropoietin by reading the information and summarizing it.
- Everyday we work better, and we know how to summarize information so that it is understandable and consistent.





## DESVENTAJAS DE LAS TICs UTILIZADAS:

- La única desventaja fue que había mucha información y tuvimos que resumir demasiado.
- Canva does not let you put other images that are not from the same application.
- We couldn't work at the same time.
- The only disadvantage was finding time to match and work together with all the team members.
- One of the challenges we faced was making the information collected and taken up only one page. And other one was finding an APP that would allow us to download the infographic in PDF format at no cost.
- It was difficult to summarize the concept of Erythropoietin in a few words.
- There were not many reliable sources on the internet.





## EXPERIENCIAS:

- La experiencia fue buena, todas estuvimos dispuestas a trabajar en tiempo y forma, lo cual nos ayudo a lograr terminar bien el trabajo.
- The experience in this project was better than in the previous one because our team kept almost all the members of the previous project.
- It was a good experience, because I learned several things that I did not know about erythropoietin. It was a challenge for the simple fact of being in English, since it is not the language to which one is accustomed and for that reason it was difficult in a certain way.





## RETOS:

- Los desafíos a los que nos enfrentamos fue a trabajar en equipo a distancia, trabajar con nuevas plataformas y herramientas de trabajo.
- When I discovered erythropoietin in the Biology class, I was too surprised and I realized that articles in English on this subject are even more full of information, although not knowing English perfectly makes it a bit complicated.





## DIFICULTADES:

- Cómo tal no hubo dificultades en nuestro equipo, ya que nos entendimos perfectamente.
- One of the challenges we faced was choosing the best article.
- We think that it was a little bit hard for us to search information, because we have no time to do a huge research, so we had to organize us too well.
- The challenge was searching for true and good information.



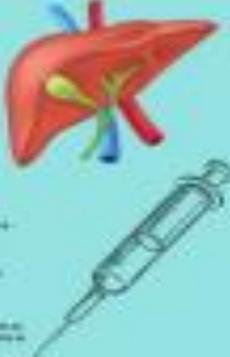


# EJEMPLOS:

## ERYTHROPOIETIN IN SPORTS

It's commonly known as EPO, this is a hormone produced in kidneys to help us make more red blood cells. The "synthetic" erythropoietin is used during cancer treatment and anemia.

In sports, EPO is used as a type of blood doping that helps to improve an athlete's endurance.



- WHAT DOES ERYTHROPOIETIN DO?**  
Erythropoietin stimulates the bone marrow to produce more red blood cells. The resulting erythrocytes increase the oxygen-carrying capacity of the blood. It increases the number of erythrocytes, the number of hemoglobin molecules, and the number of erythrocytes that contain hemoglobin.
- WHY DO WE NEED IT?**  
It's used to control anemia, a condition where the body doesn't have enough red blood cells to carry oxygen to the organs.
- WHAT DO ATHLETES USE IT FOR?**  
Athletes use EPO to increase their endurance. It's a type of blood doping that helps to improve an athlete's endurance.
- WHAT IS THE RISK IF AN ATHLETE CONSUMES EPO?**  
EPO can cause a condition called polycythemia, which is a thickening of the blood. This can lead to a heart attack, stroke, or other complications.
- WHAT DO WE USE ERYTHROPOIETIN FOR?**  
Erythropoietin is used to treat anemia, a condition where the body doesn't have enough red blood cells to carry oxygen to the organs.
- ADVERSE EFFECTS OF ERYTHROPOIETIN**  
  - High blood pressure
  - Stroke
  - Heart attack
  - Other complications
- SLEEP ANALYSIS**  
Sleep analysis is a type of blood doping that helps to improve an athlete's endurance.
- TRAINING CLUB**  
Training clubs are a type of blood doping that helps to improve an athlete's endurance.
- CLINICAL APPLICATIONS**  
Erythropoietin is used to treat anemia, a condition where the body doesn't have enough red blood cells to carry oxygen to the organs.




## "Erythropoietin" (EPO)

**WHAT IS EPO?**  
EPO IS A NATURALLY PRODUCED GLYCOPROTEIN HORMONE THAT INDUCES ERYTHROPOIESIS, AND MATURATION AND PROLIFERATION OF OXYGEN-DELIVERING ERYTHROCYTES. THE BODY USES EPO TO CONTROL THE NUMBER OF CIRCULATING ERYTHROCYTES, THUS MAINTAINING TISSUE OXYGEN DELIVERY LEVELS WITHIN A NARROW RANGE.

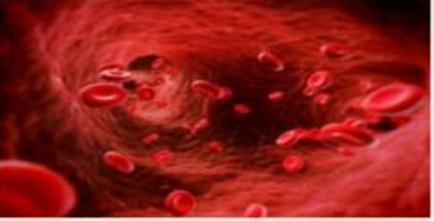
**FOR WHAT DO YOU USE IT?**  
ERYTHROPOIESIS INVOLVES HIGHLY SPECIALIZED FUNCTIONAL DIFFERENTIATION AND GENE EXPRESSION. THE MAIN ROLE OF RBCS IS TO CARRY O2 IN THE BLOOD BY THE HEMOGLOBIN MOLECULE.

**How is it produced?**  
Produced naturally by the kidneys, the EPO is a peptide hormone that stimulates the production of red blood cells in the bone marrow and regulates the concentration of red blood cells and hemoglobin in the blood.

**EPO in athletes:** Erythropoietin is a type of blood doping that can help improve an athlete's endurance.

**Consequences**  
If EPO levels are too high the body will produce too many red blood cells which can thicken the blood, leading to clotting, heart attack, and stroke.

**TEST**  
The test is a combination of urine testing, which would identify the presence of EPO and blood testing.



Trinh, K. V., Diep, D., Chen, K. J. Q., Huang, L., & Gulenko, O. (2020). Effect of erythropoietin on athletic performance: a systematic review and meta-analysis. *BMJ Open Sport & Exercise Medicine*, 6(1), e000716.

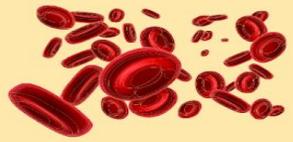
**EQUIPO AZUL INGLES 606-A Sergio Reyes Crespo**





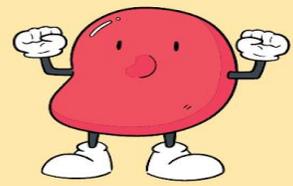
## ERYTHROPOIETIN IN HIGH-PERFORMANCE ATHLETES

Escuela Nacional Preparatoria #7 Ezequiel A. Chávez  
Arreola Enriquez Karina Michelle 606-A  
Castillo Gallardo Sebastian  
Soriano Ramirez Juritzi Noemi  
Teacher: Sergio Reyes Crespo



**WHAT IS THE FUNCTION OF ERYTHROPOIETIN IN A PERSON?**

ITS FUNCTION IS TO STIMULATE THE BONE MARROW IN THE ABSENCE OF OXYGEN CAUSING AN INCREASE IN RED BLOOD CELLS.



**WHAT WOULD BE THE ROLE OF ERYTHROPOIETIN IN HIGH-PERFORMANCE ATHLETES?**

THE FUNCTION OF ERYTHROPOIETIN IS TO STIMULATE THE BONE MARROW TO GENERATE MORE RED BLOOD CELLS. THE INCREASE IN RED BLOOD CELL PRODUCTION INCREASES ATP PRODUCTION, THIS ATP THAT COMES FROM THE RED BLOOD CELLS, PASSES TO THE MUSCLES RESULTING IN INCREASED PERFORMANCE AND A DELAY IN FATIGUE TIME.



**WHAT IS ERYTHROPOIETIN?**

It is a natural hormone produced by the kidney, whose function is to keep the concentration of red blood cells constant in the blood.



**RELATIONSHIP BETWEEN THE INCREASE OF RED BLOOD CELLS AND ENERGY INCREASE**

ERYTHROCYTES ARE A TYPE OF BLOOD CELLS, THE MUSCLES CAN RECEIVE MORE RED BLOOD CELLS WITH THE SAME AMOUNT OF BLOOD, THIS MAKES THE MUSCLES WORK MORE EFFICIENTLY, DELAYING THE ONSET OF FATIGUE AND THUS OBTAINING MORE ENERGY..



**DOPING BAN**

BLOOD DOPING WAS FORMALLY ADDED TO THE LIST OF FORBIDDEN METHODS IN 1985, AFTER MANY UNITED STATES CYCLISTS ADMITTED HAVING DOPED THEMSELVES WITH BLOOD DURING THE 1984 LOS ANGELES OLYMPIC GAMES

BENTO, R. M. D. A. (2003, 1 JUNIO). RECOMBINANT HUMAN ERYTHROPOIETIN IN SPORTS: A REVIEW. SCIELO.BR. RECUPERADO 15 DE OCTUBRE DE 2021, DE [HTTPS://WWW.SCIELO.BR/J/RBME/A/QK4RWSYRRQn53SSHCpZY6D/?LANG=EN](https://www.scielo.br/j/rbme/a/Qk4RWSYRRQn53SSHCpZY6D/?lang=en)

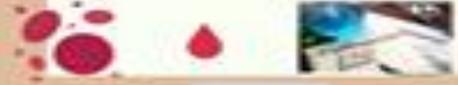
## EFFECT OF ERYTHROPOIETIN IN HIGH PERFORMANCE ATHLETES.

**WHAT IS ERYTHROPOIETIN?**  
Erythropoietin (EPO) is a glycoprotein hormone produced by the kidney.



**WHAT IS ITS FUNCTION?**

The function of erythropoietin is to regulate the production and distribution of hemoglobin and red blood cells in the body, and the amount of oxygen in the body to maintain oxygen for other cells through the blood.



**WHAT IS EPO USED FOR?**

Erythropoietin is often used to correct anemia caused by a reduced number of red blood cells or a low hemoglobin level in a patient.



**EPO IN ATHLETES.**

EPO is used by athletes to increase their performance. It is used to increase the number of red blood cells in the body, which allows the athlete to carry more oxygen to the muscles, resulting in increased performance and a delay in fatigue time.



**BANS BY EPO BOYCOT.**

The World Anti-Doping Agency (WADA) has banned the use of erythropoietin in sports since 2001. Athletes who are found to have used erythropoietin are subject to a two-year suspension from competition.






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Ciclo escolar 2021-2022  
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## EJEMPLOS:

<https://view.genial.ly/6167a47bcf39010d8a2ab5f3/interactive-content-equipo-azul-ingles-606-a>

<file:///C:/Users/yuayd/Downloads/Erythropoietin%20in%20high-performance%20athletes.pdf>

[https://drive.google.com/file/d/1UqAcYDfAMbLcK-44r1MbdPF\\_bIL31LVV/view?usp=sharing](https://drive.google.com/file/d/1UqAcYDfAMbLcK-44r1MbdPF_bIL31LVV/view?usp=sharing)

[https://www.canva.com/design/DAEsp8NJTJo/zz1nFhyHx7mA9\\_KCF-uDUQ/view?utm\\_content=DAEsp8NJTJo&utm\\_campaign=designshare&utm\\_medium=link&utm\\_source=publishsharelink](https://www.canva.com/design/DAEsp8NJTJo/zz1nFhyHx7mA9_KCF-uDUQ/view?utm_content=DAEsp8NJTJo&utm_campaign=designshare&utm_medium=link&utm_source=publishsharelink)





## APRENDIZAJES Y BENEFICIOS:

Un beneficio que me dejó esta actividad fue poder conocer más acerca de la eritropoyetina, practicar al mismo tiempo inglés y también me permitió ampliar mi vocabulario al descubrir nuevas palabras en inglés.

Nos ayudó a conocer palabras relacionadas con nuestra carrera en inglés ya que antes no las conocíamos. Conocimos más información sobre la Eritropoyetina y a su vez practicamos nuestra fluidez con el inglés.

Bueno yo creo que nos ayudó a conocer palabras relacionadas con el área de la salud en inglés, ya que antes no conocíamos ciertas palabras. También nos ayudó a repasar el tema y a comprenderlo mejor.





## Conclusiones: (1)

- Los alumnos en general tiene buen dominio de las APP para la elaboración de infografías.
- Se ve la satisfacción de los alumnos en las presentaciones de sus logros por el proceso del producto.
- Como es un producto hecho por ellos, ya que el profesor es más bien acompañante, su resultado les satisface más.





## Conclusiones: (2)

- **Los principales problemas:**

**las fechas de entrega  
el uso adecuado del formato APA  
que tengan en mente las listas de cotejo**





## Referencias:

Trinh KV, Diep D, Chen KJQ, et al. Effect of erythropoietin on athletic performance: a systematic review and meta-analysis. *BMJ Open Sport & Exercise Medicine* 2020;6:e000716. doi:10.1136/bmjsem-2019-000716. Retrieved on November 15, 2021 from <https://bmjopensem.bmj.com/content/bmjosem/6/1/e000716.full.pdf>

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Programa de Inglés VI. Escuela Nacional Preparatoria. Consultado el 7 de marzo de 2020 en [https://drive.google.com/file/d/1zdx6X7QkIVwXO97qC0SJ9X9\\_XKiBieC3/view](https://drive.google.com/file/d/1zdx6X7QkIVwXO97qC0SJ9X9_XKiBieC3/view)

