



BIOLOGICAL PASSPORT

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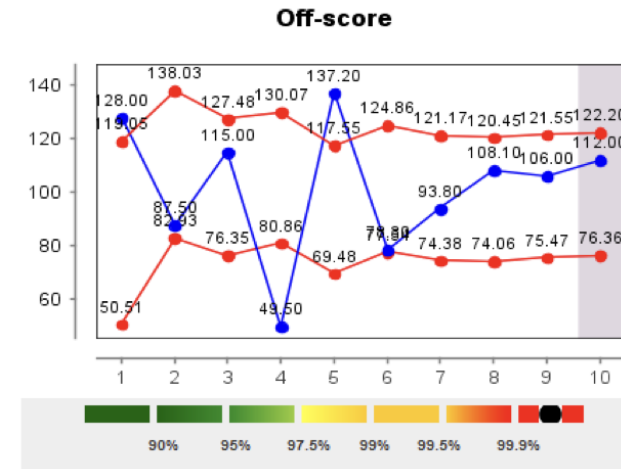
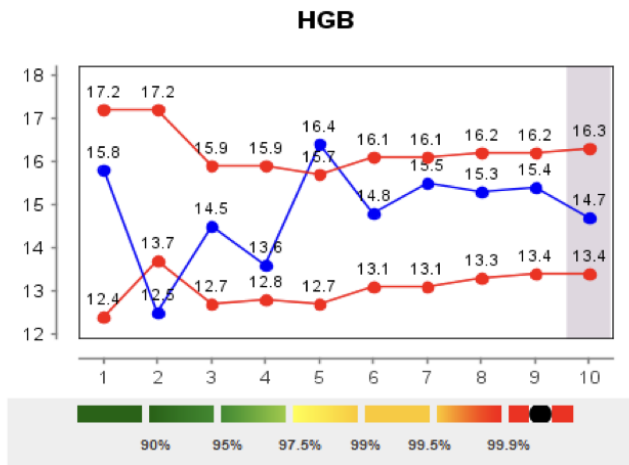


ATHLETE BIOLOGICAL PASSPORT

In all cases, the use or attempted use of a prohibited substance or method can be determined by any reliable means.



ABP consists of monitoring selected variables (doping biomarkers) over time that indirectly reveal the effect of doping as opposed to traditional direct detection of doping through analytical doping controls.



The response of governments and the sports movement to the phenomenon of doping



- Same procedures in doping control.
- Harmonization of laws and regulations.
- Same courts in case of disputes.

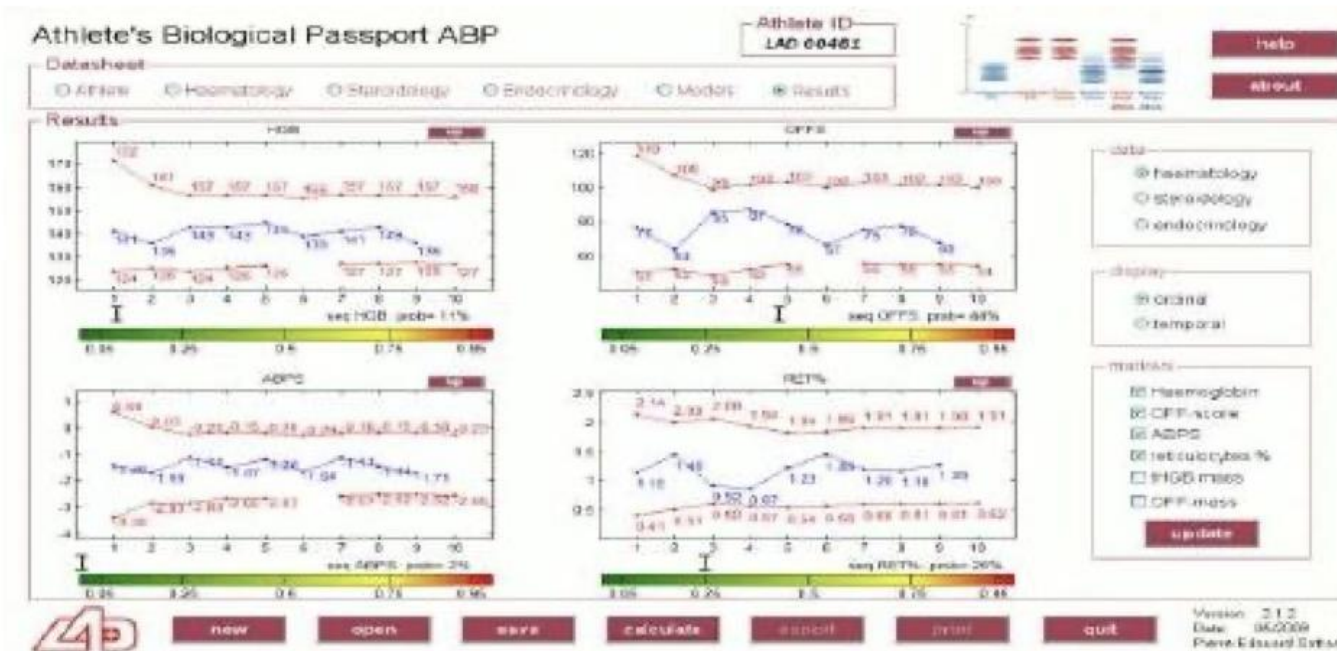


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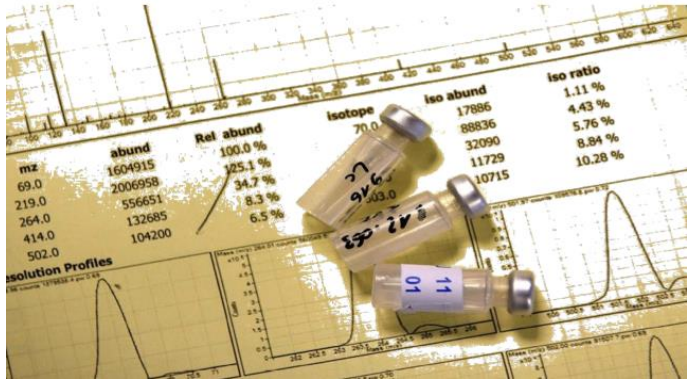
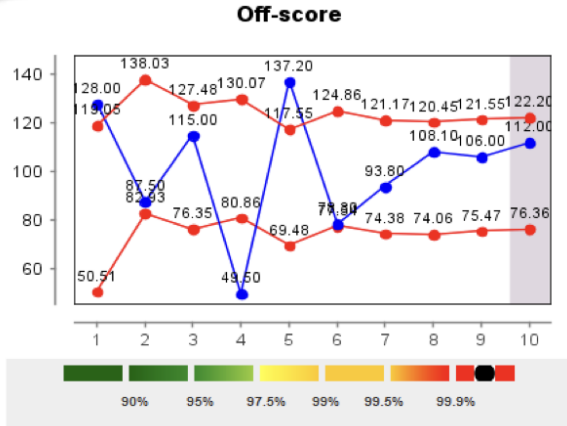


CONCEPT

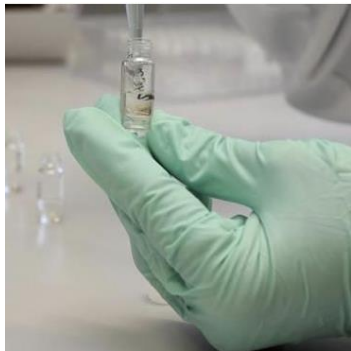


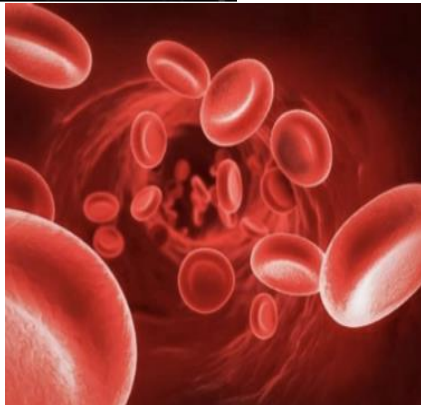
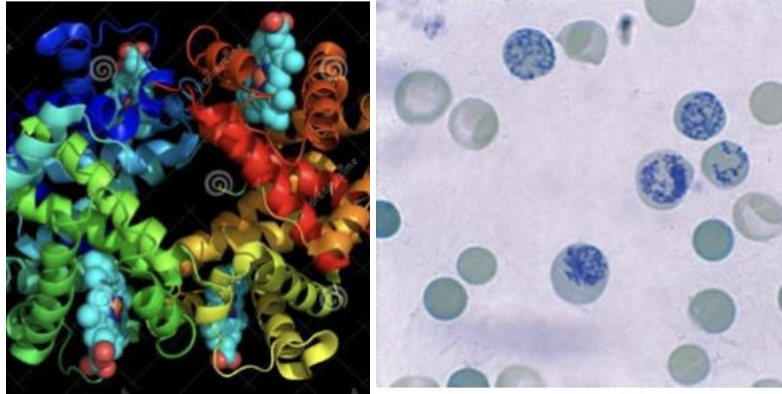
- Individual document for each athlete.
- It collects results and heterogeneous factors unique to each athlete.
- Creates two profiles derived from the results of urinary and blood controls.
- Compare and evaluate subsequent results with the profile.
- Generates information to determine possible deviations.

Big Difference



We are not looking for substances, but fluctuations





The objective is to monitor the erythropoiesis rate to identify:

- Administration of recombinant erythropoietin.
- Blood transfusion.
- Blood manipulation.
- The bio-markers are: Hematocrit Hemoglobin Red Blood Cell Count Count and % of reticulocytes Mean corpuscular volume Mean corpuscular hemoglobin Mean Corpuscular Hb concentration.

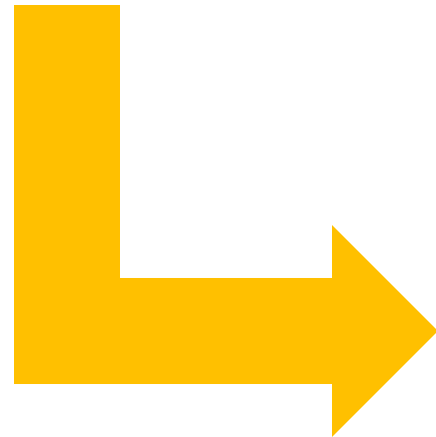


External factors (fixed and variable) To interpret the biomarkers

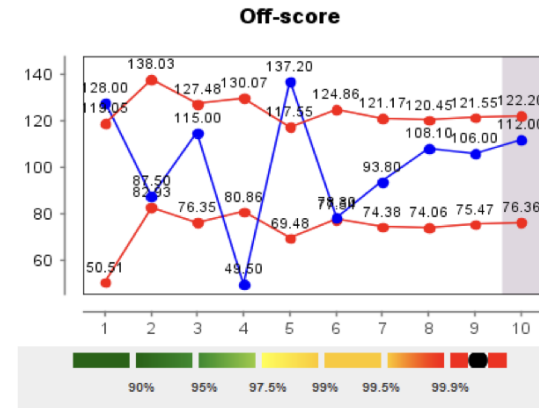


- Gender (fixed)
- Race (fixed)
- Age (fixed)
- NMSM (variable)
- Sport (fixed)
- Place and date of sample collection Whereabouts data (variable)
- Blood loss or gain information (variable)

Operation of the Biological Passport system



- Authorized material.
- Sample collection.
- Sample transportation.
- Sample analysis.
- Results.
- Evaluation of results.



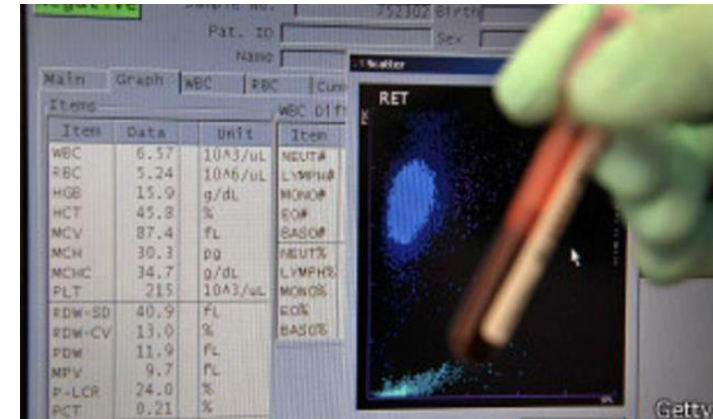
Analysis phase in the established individual profile



First phase: The samples are analyzed in a laboratory accredited by WADA/AMA



Second phase: The results are sent and analyzed AMPU (Athlete Passport Management Unit)



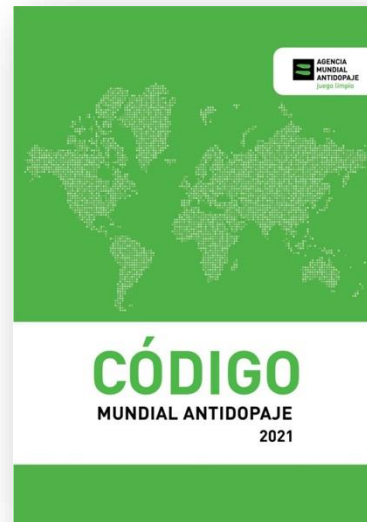
Third phase: The results are sent and analyzed by an independent group of experts.





The support of the Hematological Passport

Commentary on Article 2.2 of the World Anti-Doping Code: In all cases, the use or attempted use of a prohibited substance or prohibited method may be determined by any reliable means.

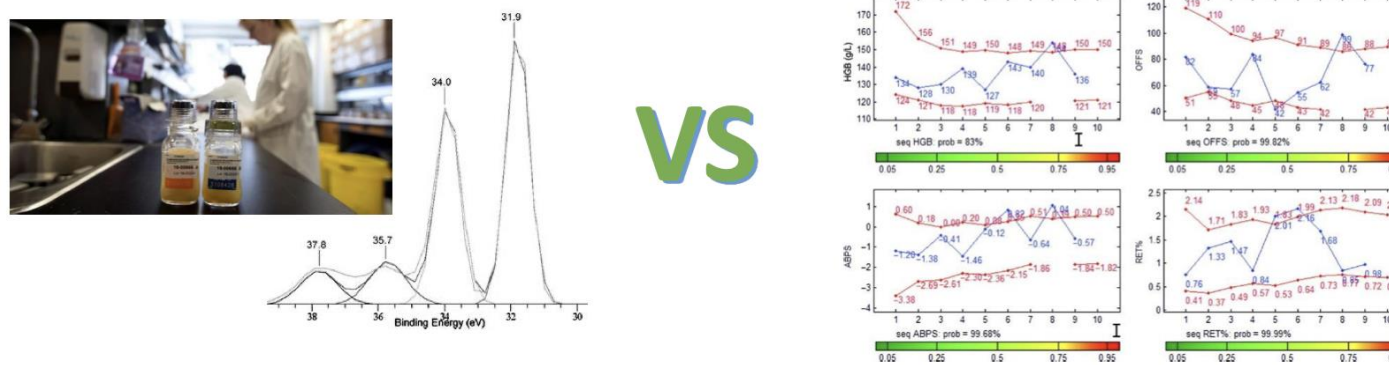


Use or attempted use may be established by other reliable means, such as the athlete's confession, witness statements, documentary evidence, conclusions drawn from longitudinal profiles, including data collected as part of the biological passport. of the athlete.

Challenges and challenges of the biological passport Strengths

Advantages of indirect detection.

The period of time during which the effects of substances are perceptible through biomarkers is much longer than the time these substances remain in the body (direct detection).



EL USO DEL PB PUEDE SERVIR DE HERRAMIENTA COMPLEMENTARIA PARA IDENTIFICAR SOSPECHOSOS



Challenges and challenges of the biological passport

Weaknesses

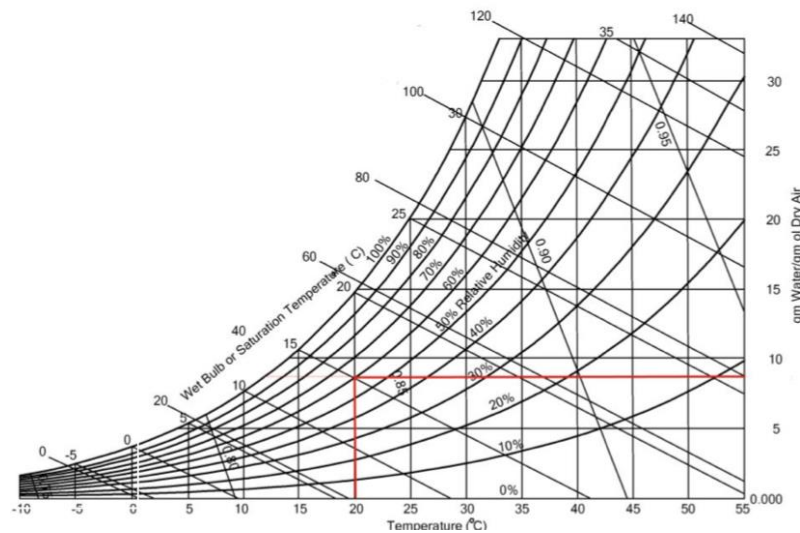


External factors and completeness

The ethnic group.

Training and permanence at altitude Individual adaptation to training

Altura (m)	Presión Barométrica (mmHg)	PiO ₂ (mmHg)
Nivel de mar	760	149
1000 m	679	133
2000 m	603	117
3000 m	523	100
4000 m	475	90




Exposure to solar irradiation increases with altitude.

Don't forget to record all your activities

barometric pressure





We invite you to learn more about the anti-doping world by accessing the ADEL educational platform and the rest of the material from our Anti-Doping Organization.



www.orad-pan.org/educacion



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