29 -THE INTERPRETATION OF LABORATORY AS A TOOL TO ASSIST THE EVALUATION AND MORPHOFUNCTIONAL A PHYSICAL EXERCISE PROGRAM. PART 1

ALEX GARCIA SANTOS
CLAUDIO ANTONIO DUARTE GOULART
Rio de Janeiro, RJ, Brazil
alex76personal@hotmail.com

Generally we have information on weight, height, circumference, skinfold thickness, but this is not enough to customize a workout, because some information obtained through the data cited above may not reflect the reality, making the prescription of exercises is not the most appropriate for the student during this period.

When we think about target heart rate, we have two paths:

Performance, where the best strategy would be to lift the spirometry test, thus analyzing the respiratory quotient, energy substrate knowing then what is being requested and then determining more precisely the heart rate training. Health, which is commonly used stress test, analyzing the VO2, which would be the ability to capture, fix, transport and utilize oxygen, and therein lies the problem, because many times the result of VO2 can be high that indicates or indicate a good physical fitness.

However this often results in the VO2 may be the result of protein catabolism, because the stress test is not able to analyze the substrates used and when it comes to health, to prescribe what to do right?

The blood test, blood test is an identity card, which tells of the past data and current students.

The CBC is analyzed in 3 parts:

Series Red cells (RBCs)
Series white (leukocytes)
Platelet (platelets)

In this first part we will analyze the relationship between the interpretation of the red series and oxygenation capacity, physical and mental stamina and hydration status.

When hemoglobin levels are low, it means that the hemoglobin loses affinity for oxygen, thereby decreasing lipolysis and increased lipogenesis, leading to the conclusion that high VO2 + low hemoglobin, the result becomes false VO2 for aerobic exercise prescription. Low hemoglobin indicates anemia, where the indication of exercise, since the student is released by the doctor, an aerobic exercise would be regenerative.

Just to anemia, we have to mention, or rather look at a few components:

Iron is very important for numerous biochemical reactions and how to exercise, physical fatigue is to check, what happens in activities strenuous, that do not generate health benefits, but depress the immune system.

Low values of organic iron stores can be assessed indirectly in the count, the mean corpuscular or cell volume (MCV or MCV). If the result is less than the limit of the method, usually 80u3, there is a lack of iron metabolism, even in the absence of anemia, promoting physical fatigue.

Ferritin is the iron stores, when low, indicates prolonged physical fatigue, may be elevated in inflammatory marker, and a great ally at the time of periodize training.

The value of MCV or MCV above the maximum of the method, usually 96 u3, nutrology suggests lack of B12, changing sleep, mental vigor and humor. This changes GH, so that rest under your student, influencing the interval between sets, loads, and even with the complexity of the movements to be performed.

As the volume status can use interface hematocrit (Ht) - hemoglobin (Hb), where Ht is about three times the amount of Hb.

Hemoglobin is the absolute value, as the hematocrit is a relative value, whenever the hematocrit is greater than three times the hemoglobin value indicates dehydration, where we have additional information to our students about the training site, ask he drink more water and explain the damage that some organs may suffer. When the hematocrit is less than three times the amount of hemoglobin, indicating fluid overload, ie, your kidney is working too much to excrete urine, which is bad, because the renal function of holding the urine will be altered and impaired , this student will have difficulty performing continuous exercise to stay for a while sharp. In Table 1 we have the evaluation of hematologic variables and clinical interpretation.

Thus, only the study of the red series will already be able to help much in the customization of exercise prescription. In Table 2 we have the relationship between the hematological variables, clinical interpretation and prescription of exercises making regular exercise and regulated very efficient.

Quadro 1: Variáveis estudadas na série vermelha do hemograma e sua interpretação clínica para avaliação morfofuncional.

Variáveis	Interpretação clínica
Hemoglobina	Transporte de oxigênio
Hematócrito	Estado de hidratação
VGM ou VCM	Reserva de ferro e B12 (indireta)
Ferritina	Reserva de ferro (direta) e Estado inflamatório
Vitamina B12	Reserva de B12 (direta)

Quadro 2: Interpretação clínica das variáveis da série vermelha do hemograma e a prescrição dos exercícios.

Variáveis	Interpretação clínica	Prescrição do exercício
Hb baixo	Anemia	Aeróbio, Fadiga e Emagrecimento
Ht> 3x Hb	Desidratação	Intensidade e Ambiente
Ht< 3x Hb	Hipervolemia	Volume e Ambiente
VCM/VGM baixo e Ferritina baixa	Carência de Ferro	Síndrome da fadiga crônica e Lesão
VCM/VGM alto e Vitamina B12 baixa	Carência de B12	Déficit de atenção e Intolerância
Ferritina alta	Inflamação	Destreinamento, Fase regenerativa, ou Interrupção

In cases of anemia, we can only prescribe exercise, if the student is released from the doctor still some precautions must be observed.

The best strategy is the aerobic training in the regeneration phase, ie, 28% to 42% heart rate reserve, as the name suggests regenerate, it aims to bring the standards of normality. Using a small volume of training, because with an impaired oxygenation increase the chances of fatigue, which can lead to injury.

Another issue that is very common especially in women with athletic profile, is the presentation of the anemic, yet they exercise intensely, so the risk of injury and only increase weight loss is practically zero, noting that weight loss is lean body mass and decreased fat percentage. What happens now is the protein catabolism by the process of gluconeogenesis, where we use the word catabolism have to think of destruction, which is not good, because there is loss of muscle. Unfortunately catabolism is something also common in non-anemic athletes who train and not so strenuous, because lipolysis is inhibited and despite being within the standard weight, the percentage of fat is not the appropriate standard, being always with that "Fatso "or unwanted flab here and there.

So in a situation of anemia diagnosed by the doctor, where the student is released for physical exercise, the best strategy is to forget performance for a moment, weight loss, but rather use the training as non-pharmacological therapy, doing regular exercise and a great promoter regulated health!

Dehydration is very serious because it is not only a matter of putting the student to drink water, but to demonstrate that this can damage your health, affecting vital organs.

In this case we reduce the intensity of training to avoid a severe sweating, the training environment should also be fresh, airy, or even air-conditioned, prevented further loss of water and electrolytes.

Unfortunately what is proposed today are mostly extensive training sessions, where the proposal would count calorie expenditure and is not this way, because we must increase energy expenditure in a customized manner, conscious, knowing what we are using energy substrate predominantly metabolic pathway and which our respiratory quotient is close to 0.71 or 1.0.

This way we avoid situations hyperthermia and rhabdomyolysis, which can cause a person to risk of death.

Causes of Hypervolemia:

Excessive fluid infusion
Renal
Heart failure
Liver failure
Pulmonary insufficiency
Malnutrition

We once again prioritize the aerobic phase and regenerative small volumes, as most of the causes listed above the risk of early fatigue is always present. The training environment should also be thoroughly studied, because if it is necessary to offset this student to the hospital, this should already be in emergency planning. It is worth remembering that we will only work with students in this situation by medical clearance.

Iron deficiency, the ideal is to decrease the volume, intensity, increase the interval between training sessions, reduce loads, put motor gesture facilitated exercises, exercises for the switch segments. Having special attention to the plane of motion, as due to physical fatigue risks of joint damage increase.

It is very common in this case the onset of chronic fatigue syndrome, as with iron deficiency decreases oxygenation, including the muscles, making exercise something hard and tiring for the student, even if the training guidelines do not indicate this. The periodization is very important now, especially for women, because they combine a time like this of iron deficiency in the premenstrual period, the chances of injury will become much larger.

Lack of B12 is totally related to mental fatigue, students will present this framework attention deficit and exercise intolerance. The grand strategy is to decrease the volume, create some exercise within the target path, that is so entertaining to accomplish the training session, often mental fatigue influence on eating habits, which can disrupt the training schedule, or even a decisive influence on the results of the assessments or reassessments.

Inflammation many times it is necessary to stop the training in this situation, but when the doctor releases for the training sessions, ideally on periodize mesocycle of Incorporation, using microcycles: introductory, condition I, condition II, and recovery, endeavor to use loads children, be very careful about the joints, then this case would be the most suitable exercises in the sagittal plane, and mitigation of impacts. This serves for both strength training and aerobic exercise care also in joint mobility, where the stretch will be a better strategy than flexibility.

It is not enough to learn the guidelines for a good prescription, for before we have to know how to interact with other areas, especially with doctors, where the area of health, they are the professionals responsible for the diagnosis, we must learn to interpret, then decide what to plan for training.

So physical education is really working together with medicine, providing health, because sport is not necessarily synonymous with health, but can also be income, which results in damage and depresses the immune system. What will really help the non-athlete population seeking preventive or curative health is moderate exercise, or light, regular, regulated, or rather custom!

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PHYSICAL EXERCISE PROGRAM. PART 1

SUMMARY

This is the first of eight shares of the relationship of how the blood test is important in assessing students in order to prescribe exercise.

Divided in:
A red-Series
2-Series white
3-Platelet
That can still be divided into:
1-Study of Anemias
2-WBC
3-Diabetes
4-Lipid Profile
5-Renal Function
6-Function Biliary and Pancreatic
7-thyroid function
8-Electrolytes
We may use the guidelines and principles of sports training, as a potent promoter of health.
We begin the study as anemia, and how through it we can see:
Fatigue, difficulty and its relation to weight loss.
Environment, the intensity and volume of training, ie, accrued.
The Chronic Fatigue interfering with planes of movement, thus avoiding injury.
Need to interrupt the training, attention deficit and exercise intolerance.
So putting the professional physical education as a key part in preventive and curative health of the population. Is fundamental to the non-pharmacological therapy.

L'INTERPRÉTATION DES LABORATOIRE COMME OUTIL POUR AIDER LES ÉVALUATION ET MORPHOFONCTIONNELLE UN
PROGRAMME D'EXERCICE PHYSIQUE. PARTIE 1

RÉSUMÉ

Ceci est le premier des huit actions de la relation de la façon dont le test sanguin est important dans l'évaluation des élèves, afin de prescrire des exercices.

Divisé
en:
Un rouge-Série
2-Série blanche
3-plaquettaire
Cela peut encore être divisé en:
1-Etude des anémies
2-WBC
3-diabète
4-Lipid Profile
5-la fonction rénale
6-fonction biliaire et pancréatique
7-fonction thyroïdienne
8-électrolytes
Nous pouvons utiliser les directives et les principes de l'entraînement sportif, comme un promoteur puissant de la santé.
Nous commençons l'étude comme l'anémie, et comment à travers elle, nous pouvons voir:
La fatigue, la difficulté et sa relation à la perte de poids.
Environnement, l'intensité et le volume de la formation, c'est à dire courus.
La fatigue chronique interférant avec plans de mouvement, évitant ainsi des blessures.
Besoin d'interrompre la formation, déficit d'attention et intolérance à l'exercice.
Donc, mettre l'enseignement professionnel physique comme un élément clé en matière de santé préventifs et curatifs de la population. Est fondamentale pour le traitement non pharmacologique.

LA INTERPRETACIÓN DE LABORATORIO COMO HERRAMIENTA DE AYUDA A LA EVALUACIÓN Y MORFOFUNCIONAL UN PROGRAMA DE EJERCICIO FÍSICO. PARTE 1

RESUMEN

Esta es la primera de las ocho acciones de la relación de la forma en la prueba de sangre es importante para evaluar a los estudiantes con el fin de prescribir ejercicio.

Divide en:
Un rojo de la serie
2 de la serie blanca
3-plaquetas
Que todavía se pueden dividir en:
1-Estudio de Anemias
2-WBC
3-Diabetes
4-Perfil de lípidos
5-Función Renal
6-funciones biliares y pancreáticos

7 de la función tiroidea
8-Los electrolitos

Podemos utilizar las directrices y los principios del entrenamiento deportivo, como un potente promotor de la salud. Al comenzar el estudio como la anemia, y cómo a través de ella podemos ver:

Fatiga, dificultad y su relación con la pérdida de peso.
Medio ambiente, la intensidad y el volumen de entrenamiento, es decir, devengados.
La fatiga crónica interfiere con los planos de movimiento, evitando así lesiones.
Necesidad de interrumpir la formación, déficit de atención e intolerancia al ejercicio.

Así que poner la educación física profesional como un elemento clave en la salud preventiva y curativa de la población. Es fundamental para el tratamiento no farmacológico.

A INTERPRETAÇÃO LABORATORIAL COMO FERRAMENTA PARA AUXILIAR A AVALIAÇÃO MORFOFUNCIONAL E A PRESCRIÇÃO DE EXERCÍCIOS FÍSICOS. PARTE 1

RESUMO

Este é o primeiro das 8 partes da relação de como o exame de sangue é importante na avaliação dos alunos com a finalidade de prescrever exercícios físicos.

Dividimos em:
1-Série vermelha
2-Série branca
3-Plaquetária

Que ainda podem ser divididos em:
1-Estudo das Anemias
2-Leucograma
3-Diabetes
4-Perfil Lipídico
5-Função Renal
6-Função Biliar e Pancreática
7-Função Tireoidiana
8-Eletrólitos

Podemos utilizar as diretrizes e os princípios do treinamento desportivo, como um potente agente promotor de saúde.

Começaremos como Estudo das Anemias, e como através dele podemos verificar:
Fadiga, e sua relação com dificuldade de emagrecimento.
Ambiente, a intensidade e volume dos treinos, ou seja, a periodização.
A Fadiga Crônica interferindo nos planos de movimento, assim evitando lesões.
Necessidade de interrupção do treino, déficit de atenção e intolerância ao exercício.

Assim colocando o profissional de educação física como peça importante na saúde preventiva e curativa da população. Sendo fundamental na terapia não farmacológica.