

Sportmen / patients pictures

### ***Complete general physiology***

#### ***Introduction***

Introduction (1/2)

Introduction (2/2)

Cells

Tissues (1/7)

Tissues (2/7)

Tissues (3/7)

Tissues (4/7)

Tissues (5/7)

Tissues (6/7)

Tissues (7/7)

Organs and systems

Conventions

#### ***The Skeletal system***

Introduction

Tissues of the skeletal system (1/2)

Tissues of the skeletal system (2/2)

Bone growth

Types of bones and bone structure

Types of bones and bone structure (1/2)

Types of bones and bone structure (2/2)

Joints

Synovial joints

Joint mechanics

Joint range of motion

Forearm range of motion (front view)

Forearm range of motion (side view)

Shoulder range of motion (front view)

Shoulder range of motion (side view)

Hip range of motion (front view)

Hip range of motion (side view)

Knee range of motion (side view)

Foot range of motion (front view)

Foot range of motion (side view)

Joints

Knee joint (sagittal section)

Scapulohumeral joint (side view)

Shoulder bursae (front view)

Hip (front view)

#### ***The lymphatic system***

Introduction

Lymph vessels

Lymphatic drainage

Lymph nodes

*Collection Ingénierie Du Sport et Performance*

**CONTENU DETAILLE VERSION SPORT**

**LOISIRSANTÉ**

▶ **A Chaque rubrique et sous-rubrique**

**Correspond des visuels pratiques et**

**Pédagogiques.**

▶ **Progression complète de l'anatomie**

**Générale à la physiologie du sport Santé**

▶ **Construisez vos séances bien-être**

**performance**

**avec votre outil High Tech NATOM - IFDIS**

Tonsils  
Spleen  
Thymus  
Blood  
Blood plasma  
Blood – White blood cells  
Blood – Red blood cells  
Blood – Platelets  
Blood types

### ***The digestive tract***

Introduction  
Upper gastrointestinal tract  
Digestive processes – swallowing / deglutition  
Digestive processes – The stomach  
Digestive processes – Liver and pancreas  
Digestive processes – The small intestine  
Digestive processes – The colon (1/2)  
Digestive processes – The colon (2/2)  
Digestive processes – The rectum  
Accessory organs of the alimentary canal – The liver (1/4)  
Accessory organs of the alimentary canal – The liver (2/4)  
Accessory organs of the alimentary canal – The liver (3/4)  
Accessory organs of the alimentary canal – The liver (4/4)  
Accessory organs of the alimentary canal – The pancreas (1/3)  
Accessory organs of the alimentary canal – The pancreas (2/3)  
Accessory organs of the alimentary canal – The pancreas (3/3)

### ***The urinary system***

Introduction  
Kidneys  
Filtering and regulation of body fluids (1/4)  
Filtering and regulation of body fluids (2/4)  
Filtering and regulation of body fluids (3/4)  
Filtering and regulation of body fluids (4/4)  
Kidney Hormone secretion (1/2)  
Kidney Hormone secretion (2/2)  
The excretory urinary tract (1/2)  
The excretory urinary tract (2/2)

### ***The five senses***

Introduction  
Sight (1/2)  
Sight (2/2)  
Smell  
Hearing  
Balance  
Touch  
Taste

## ***Growth***

Introduction

The signs of growth (1/4)

The signs of growth (2/4)

The signs of growth (3/4)

The signs of growth (4/4)

Why does growth differ across children? (1/2)

Why does growth differ across children? (2/2)

How does growth occur?

Growth disorders

## ***Nervous system***

Introduction

Neurons

Voluntary motricity

The central nervous system (1/5)

The central nervous system (2/5)

The central nervous system (3/5)

The central nervous system (4/5)

The central nervous system (5/5)

The peripheral nervous system

The vertebral column

The autonomic nervous system (1/3)

The autonomic nervous system (2/3)

The autonomic nervous system (3/3)

## ***Energy paths***

Introduction

Introduction

Energy paths

Respiratory quotient

For or against the Randle effect on oxidized substrate selection

Duration of body reserve recovery

## ***Cardiovascular system***

Introduction

Organisation of the circulatory system (1/4)

Organisation of the circulatory system (2/4)

Organisation of the circulatory system (3/4)

Organization of the circulatory system (4/4)

The blood vessels (1/3)

The blood vessels (2/3)

The blood vessels (3/3)

Heart anatomy

Heart valves

Heart activity

The heart cycle

## ***Cardiovascular system and exercise***

Introduction  
Adaptation of cardiac output  
Heart rate development  
Resting heart rate  
Modulation of heart rate during moderate exercise  
Modulation of heart rate during strenuous exercise  
Special cases  
Mechanisms of heart rate regulation (1/2)  
Mechanisms of heart rate regulation (2/2)  
Stroke volume response to exercise  
Regulation mechanisms of muscle blood flow  
Notion of circulatory balance (1/3)  
Notion of circulatory balance (2/3)  
Notion of circulatory balance (3/3)  
Blood pressure change

## ***Cardiovascular training – Training sessions***

Introduction  
Cardiovascular training  
Aerobic endurance  
Aerobic resistance  
vVO<sub>2</sub>max – Power at VO<sub>2</sub>max  
Reminder: cardiovascular objectives  
Intensity and anaerobic dominant power (lactic power)  
Speed

## ***Muscular system***

General points  
Muscle tissues  
Skeletal muscle structure  
Muscle groups (1/4)  
Muscle groups (2/4)  
Muscle groups (3/4)  
Muscle groups (4/4)

## ***Endocrine system and muscle training***

Introduction  
Insulin  
Glucagon  
Cortisol  
The somatotrophic axis (1/3)  
The somatotrophic axis (2/3)  
The somatotrophic axis (3/3)  
Catecholamines (1/3)  
Catecholamines (2/3)  
Catecholamines (3/3)  
Thyrotropin-releasing factor (1/2)

Thyrotropin-releasing factor (2/2)

### ***Muscular system and exercise***

Muscle insertions

- Forearm (front view)
- Forearm (back view)
- Arm (front view)
- Arm (back view)
- Thigh (front view)
- Thigh (back view)
- Leg (front view)
- Leg (back view)
- Hand (front view)
- Hand (back view)
- Foot (front view)
- Foot (back view)

Muscle and physical exercise

- Muscle fiber types
- Main physiological characteristics of muscle fibers
- Principle of muscle contraction
- The various types of muscle contraction
- Summation of the various muscle fiber types
- Working principle of agonist / antagonist muscles during movement

### ***Muscle training – training sessions***

Introduction

Main workout exercises

Target: muscle bulk

Target: muscle strength

Target: muscle strength at full throttle

Target: muscle strength at full throttle (1/2)

Target: muscle strength at full throttle (2/2)

Plyometric speed – Target: muscle speed strength

Target: weight loss

BMI

### **Muscle exercises**

Curl-Up Abdominal Endurance Test

Biceps dumbbell exercises

Bench press

Incline bench press

Latissimus dorsi / Lats (wide grip)

Flat bench dumbbell flys

Split jerk

Oblique muscles  
Shoulder press  
Rower warm up  
Vertical rowing with narrow grip  
Rowing machine exercises  
Special moves  
Adductor stretch  
Biceps femoris stretch  
Deltoid and triceps stretch  
Back stretch  
Quadriceps stretch

### ***Overtraining***

Introduction  
Types of overtraining  
Preventing overtraining syndrome  
Detecting overtraining  
Handle and understand overtraining (1/5)  
Handle and understand overtraining (2/5)  
Handle and understand overtraining (3/5)  
Handle and understand overtraining (4/5)  
Handle and understand overtraining (5/5)  
Conclusion

### ***Drug use***

Introduction  
Non-medical drugs and major ways of taking drugs  
Narcotic analgesics  
Stimulant drugs  
Laxatives, weight loss drugs and diuretics  
Beta blockers  
Corticosteroids  
Anabolic-androgenic steroids (1/3)  
Anabolic-androgenic steroids (2/3)  
Anabolic-androgenic steroids (3/3)  
Growth hormone (hGH) (1/2)  
Growth hormone (hGH) (2/2)  
Erythropoietin (EPO) (1/3)  
Erythropoietin (EPO) (2/3)  
Erythropoietin (EPO) (3/3)  
What about genetics?  
Summing up

### **Medical examinations**

Introduction  
X-ray (1/2)  
X-ray (2/2)  
Lymphography  
Scan

MRI (magnetic resonance imaging)  
Scintigraphy  
Sonogram  
Doppler sonography  
Endoscopy  
Electrocardiogram (ECG)  
Electroencephalogram  
Mammography

### ***PAR-Q (Physical Activity Readiness Questionnaire)***

Introduction  
Questionnaire  
Answers 1  
Answers 2  
Form

### ***First aid care***

Introduction  
Cardiac arrest  
Burns  
Heat stroke  
Suffocation  
Fainting attack in the conscious patient  
Loss of consciousness  
Nosebleed  
Wound bleeding  
Emergency phone calls

### ***Glossary***

Glossary (1/3)  
Glossary (2/3)  
Glossary (3/3)