Williams’ Nutrition for Health, Fitness and Sports p 1-4, 13-35, 37-53

What is sports nutrition?

The application of nutritional principles to enhance sports performance.

To promote good health

To promote adaptations to training

To recover quickly after each training session

To perform optimally during competition

Louise Burke, Australian Institute of Sport

Homeostasis???

Metabolic changes affected by:

Intensity\*\*\*

Level of fitness

Duration

Substrate availability

Nutritional status

Diet

Feeding during ex

Previous ex

Temperature and altitude

Definitions

Physical Fitness

Physical Activity

Overload

Progression

Specificity

Recuperation

Individuality

Reversibility

Overuse

Major functions of nutrients In food

The Prudent Healthy Diet

Balance food with physical activity

Eat a wide variety of nutrient-rich foods in their natural form- MyPlate.

Moderate in total fat, but low in sat, transand cholesterol.

Plant-rich: vegetables, fruit, legumes, whole-grains.

Choose beverages and foods that reduce added sugars.

Use less salt and sodium.

Eat moderate but adequate protein: plant sources, smaller amounts of fish, skinless poultry and lean meat.

Adequate calcium and iron.

Keep food safe.

Benefits & risks of additives and supps.

Drink ETOH in moderation, if at all.

Enjoy your food. **Eat what you like** but balance it within your overall healthful diet.

Dietary Guidelines for Americans

www.ChooseMyPlate.gov ChooseMyPlate offers personalized eating plans and interactive tools to help evaluate food choices based on *Dietary Guidelines for Americans*.

Analysis program no longer available

Are athletes today receiving adequate nutrition

Results of dietary surveys are mixed

Generally

Inadequate energy and carbohydrate

More fat than recommended

Consumption of vitamins and minerals varies

Iron and calcium low in weight-control sports

K+ low in nearly everyone

Take dietary supplements

Vitamins and minerals

Performance enhancing supplements

Athletes and malnutrition

Insufficient knowledge to make appropriate food choices

Poor or no sports nutrition information

Advertisements in sports media

Poorly informed coaches

Financial constraints

Time limitations for food preparation

To optimize sports performance

Depends on a variety of factors

Sex

Age

Body weight status

Eating and lifestyle patterns

Type of sport and training

Science Flexes its Muscles

Nutritional Quackery in Health and Sports

Thousands of foods and supplements are marketed to enhance health and physical performance

Why?

Valid information

Epidemiological research (aka observational )

Study large populations to find relationships between two variables

Retrospective techniques

Looking back with two groups

Prospective techniques

Looking forward with one group

Does not determine cause and effect relationship

Causality may be inferred if relationship is very strong

Relative risk (RR) or odds ratio (OR)

RR of 1.0 is normal probability; 2.0 is twice and 0.5 is half

Experimental research

Essential to establishing a cause and effect relationship

Independent variable – cause

Dependent variable – effect

Populations

Small groups (University laboratory research)

Large groups (National or International studies)

Conditions

Randomization of subjects

Matching of subjects

Control or placebo condition

Double blind procedure

Gold standard

Randomized controlled trials (RCT) with large populations

Basis for the dietary recommendations presented in this class

Evidence-based research

Individual studies

Reviews of RCTs and epidemiological studies

Meta-analyses of RCTs

Position statements and position stands

American College of Sports Medicine

Academy of Nutrition and Dietetics

Prudent recommendations