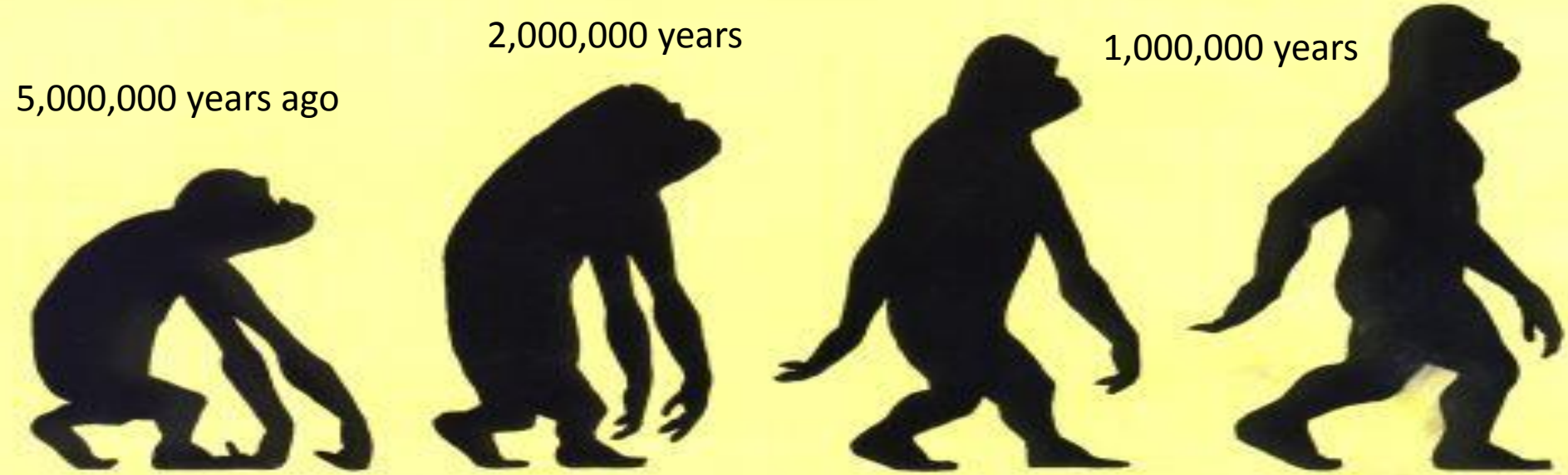
FITNESS INDUSTRY ESSENTIAL PARTNER IN HEALTH CARE or EXERCISE IS A MEDICINE

Peter R Rehor PhD

5,000,000 years ago

2,000,000 years

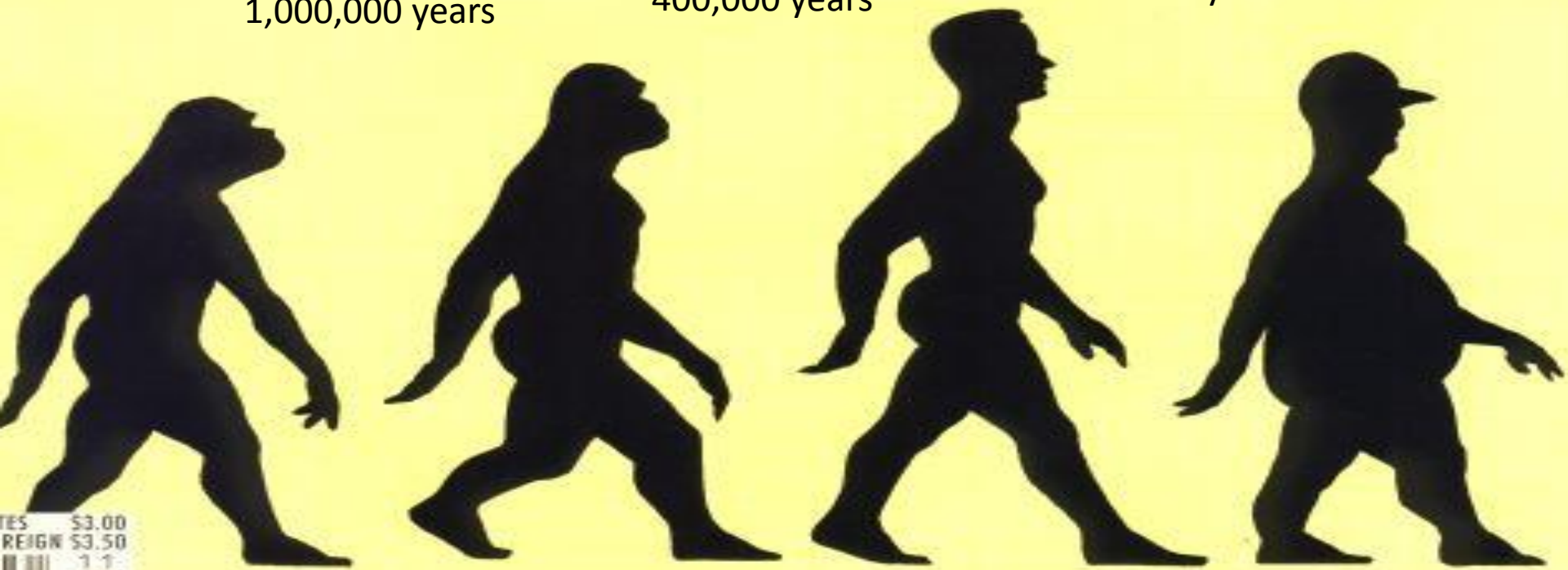
1,000,000 years



1,000,000 years

400,000 years

Last 20 years



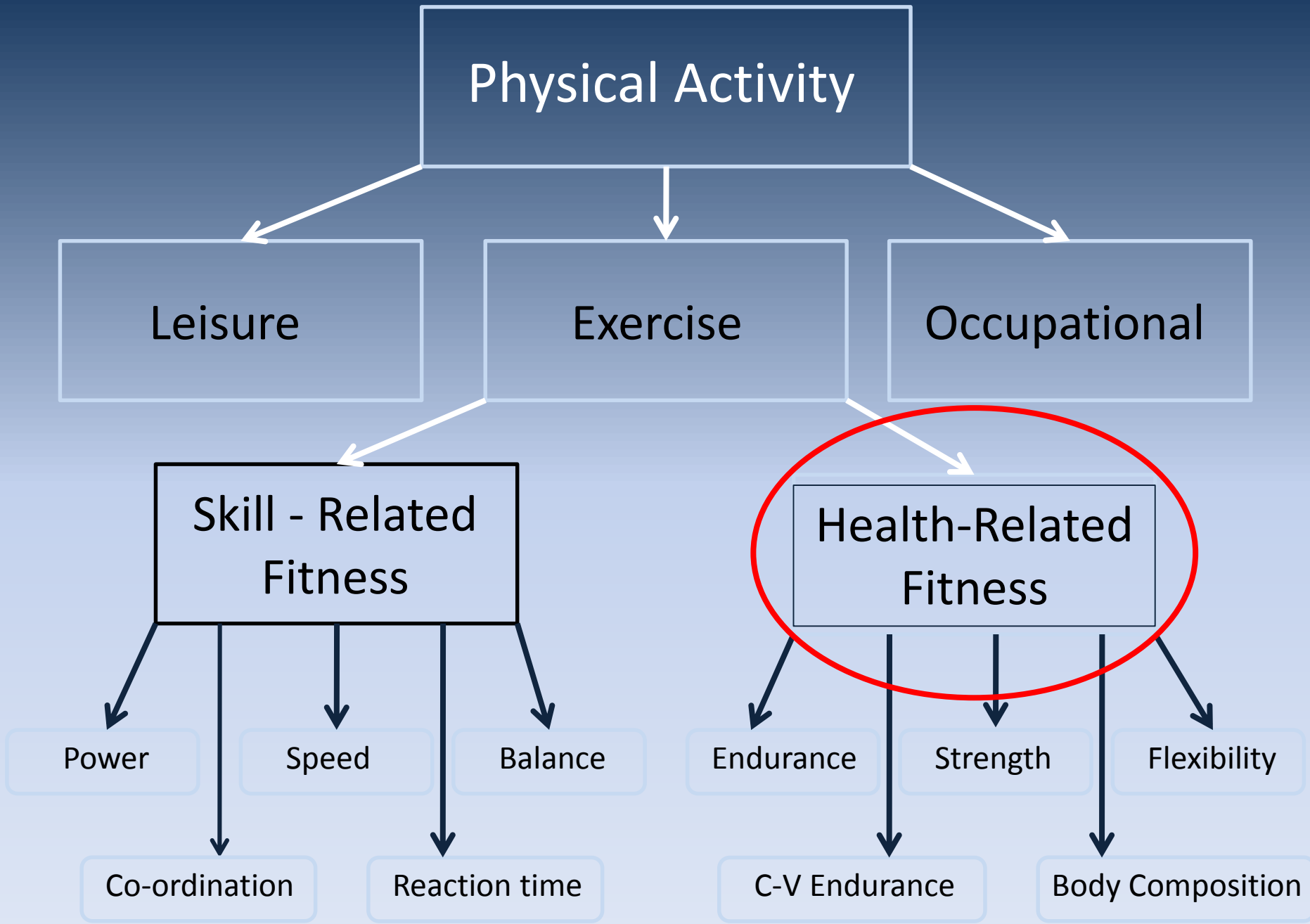
TES $3.00
REIGN $3.50

We ruin our health to make money,
only to spend our money to restore our health

The Role of Fitness Professional

To evaluate and treat both, asymptomatic and symptomatic populations with medical conditions, functional limitations and disabilities, through the application of exercise and nutrition, for the purpose of improving health and functional independence.


Flexibility
Leisure Physical Activity
Health-Related Fitness
Occupational Physical activity
Exercise
Endurance
Co-ordination
Training
Strength
Physical Activity
Skill - Related Fitness
Reaction time
Balance
C-V Endurance
Power
Speed
Conditioning
Body Composition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Body Composition

Exercise Therapy

Canadian Society of Exercise Physiologists (CSEP)

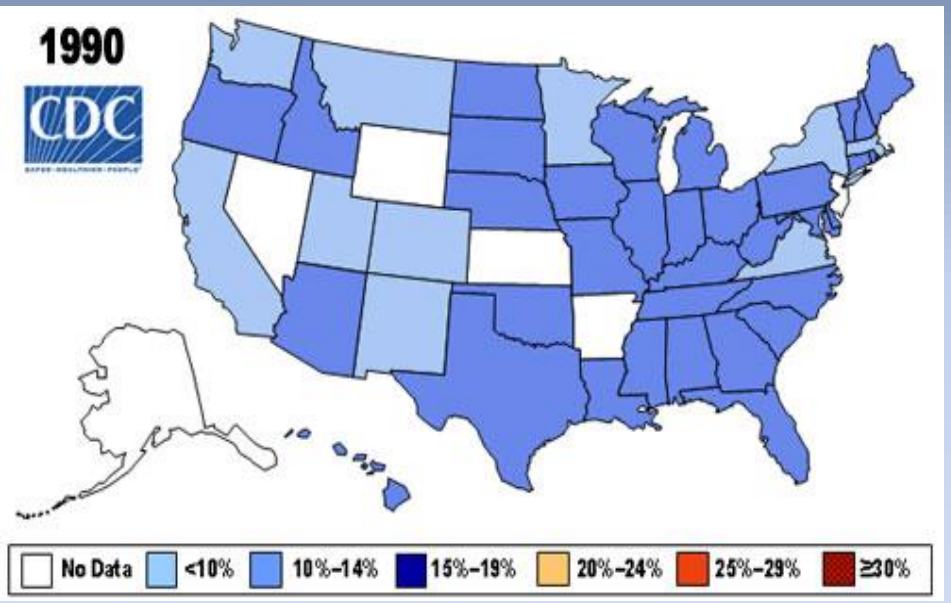
Prevention

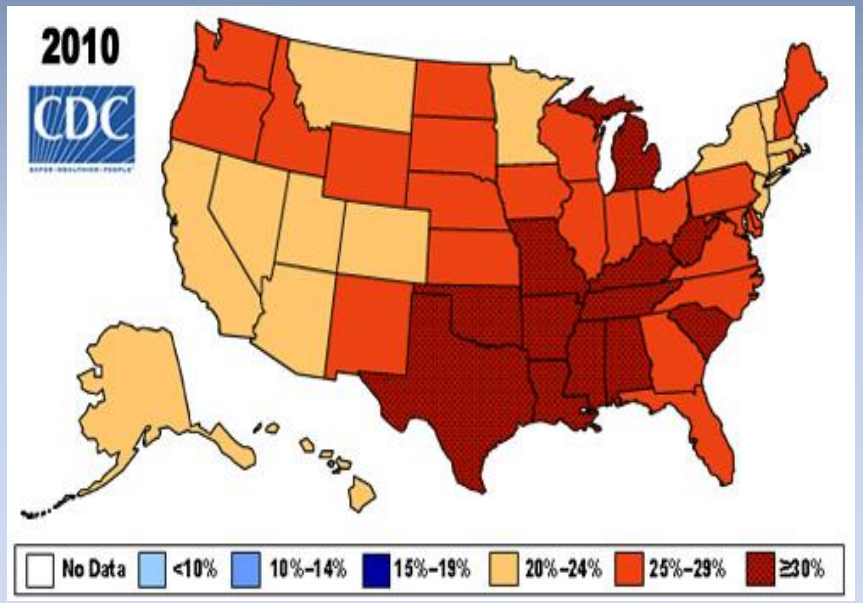
High Risk Population

Hospitalization Surgical Care

FITNESS PROFESSIONAL

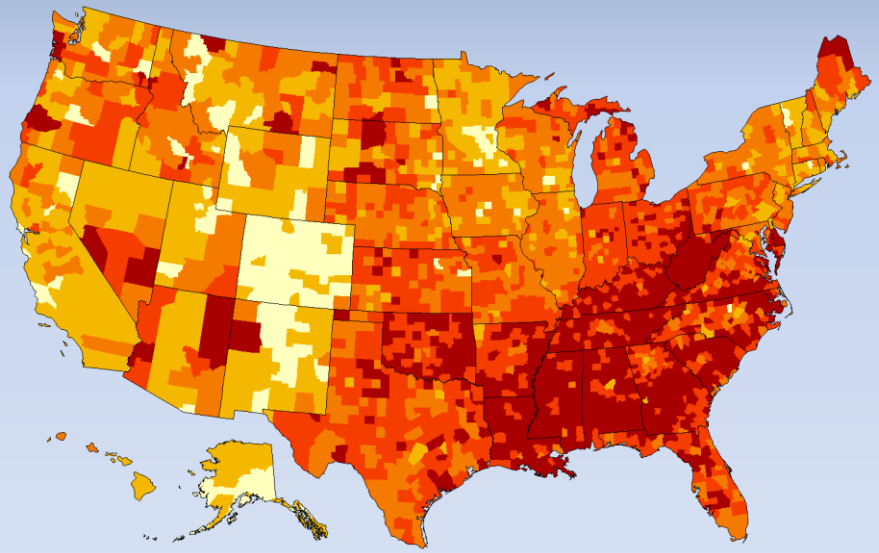
Prevalence of Obesity in the US



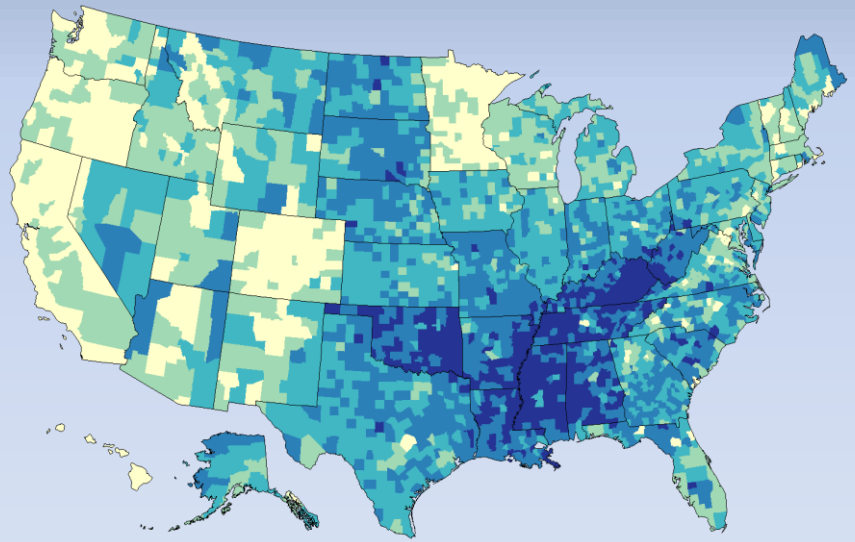


Relationship between NDDM and Inactivity

County-level Estimates of Diagnosed Diabetes among Adults aged ≥ 20 years: 2008



County-level Estimates of Physical inactivity among Adults aged ≥ 20 years: 2008



•British Columbians are Canada's most physically active – 59% of British Columbians over 12 y-old receive enough physical activity (30 minutes a day, most days of the week for adults) to derive health benefits. The national average is 44%. (Source: 2002/03 Canadian Community Health Survey)

British Columbia spends an estimated half a billion dollars in indirect productivity losses due to premature death and disability attributed to physical inactivity. (Source: Ministry of Health Services, 20012)

In Canada, an estimated $8.3 billion in direct and indirect costs in annual health care costs can be directly attributed to physical inactivity. (Source: Katzmarzyk at all. (2012)

Child obesity in Canada has tripled; overweightness has doubled from the period 1996 to 2012. The prevalence of overweight increased from 15% to 39.4% for boys; 15% to 34.2% for girls while the prevalence of obesity increased from 5% to 16.6% for boys and 5% to 14.6% for girls. (Source: Mark S. Tremblay,2013)

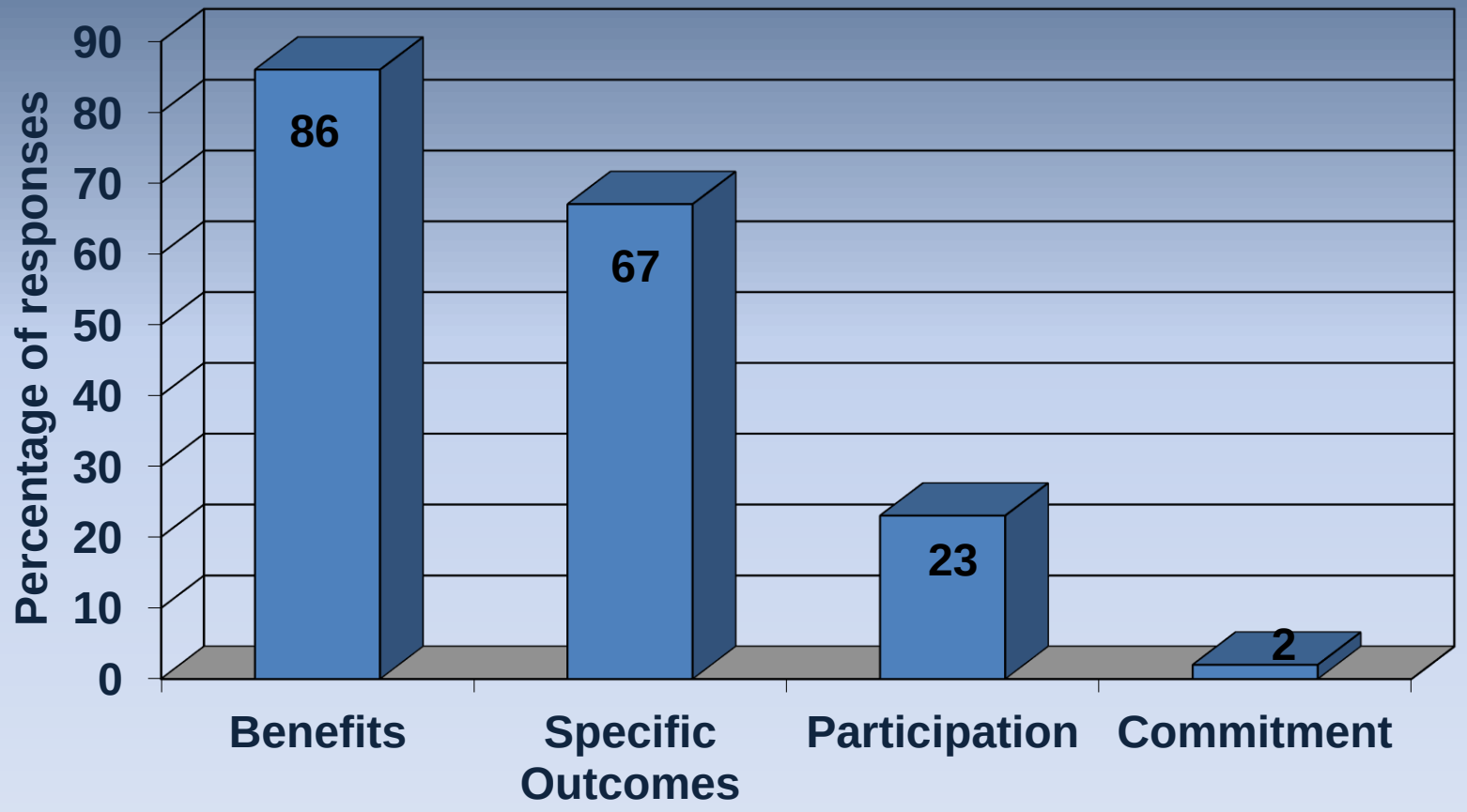
Percentage attaining selected physical activity criteria, household population aged 20 to 79 years, March 2007 to February 2009 in Canada

Moderate-to-vigorous physical activity accumulated in bouts of at least 10 minutes

Days active out of 7	At least 15 minutes a day			At least 30 minutes a day		
	%	95% confidence interval		%	95% confidence interval	
		from	to		from	to
Less than 1	36.7	31.5	41.8	46.6	42.7	50.5
At least 1	63.3	58.2	68.5	53.4	49.5	57.3
At least 2	41.2	35.3	47.1	29.6	25.3	33.9
At least 3	26.5	21.5	31.5	16.8	13.3	20.3
At least 4	16.2	12.5	19.8	9.4	6.9	11.9
At least 5	8.8	6.3	11.3	4.8	3.2	6.3

Source: 2007 to 2009 Canadian Health Measures Survey published by Statistics Canada in 2011

Exercise Adoption (prijmuti) Rates



Adherence ke cvičení

Zvyk na pravidelné cvičení

Zvyk na cvičení

Angažování do pravidelného cvi čení

postoje

Úmysl začít cvičit

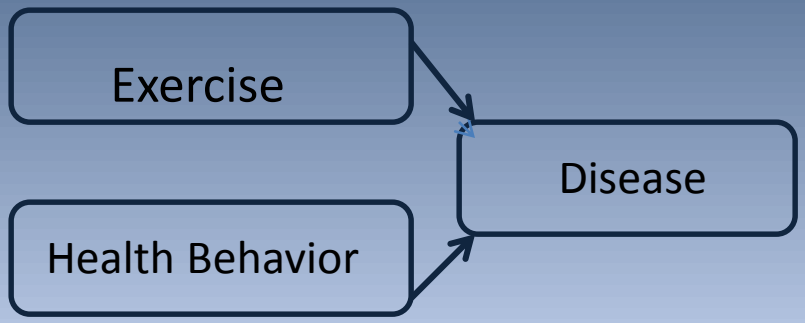
Víra ve výsledek

Sociální normy a normy prostředí

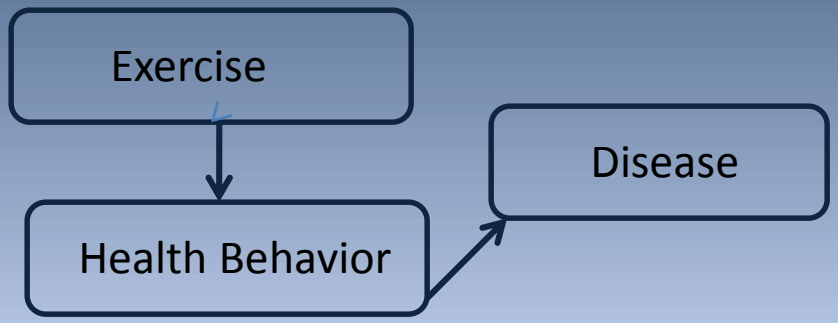
Self-efficacy

The Healing Effect of Exercise

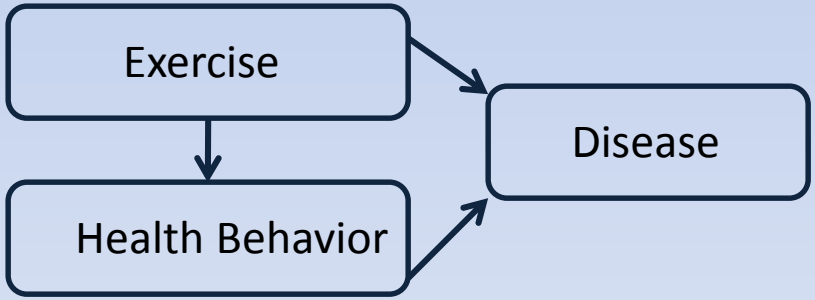
Direct



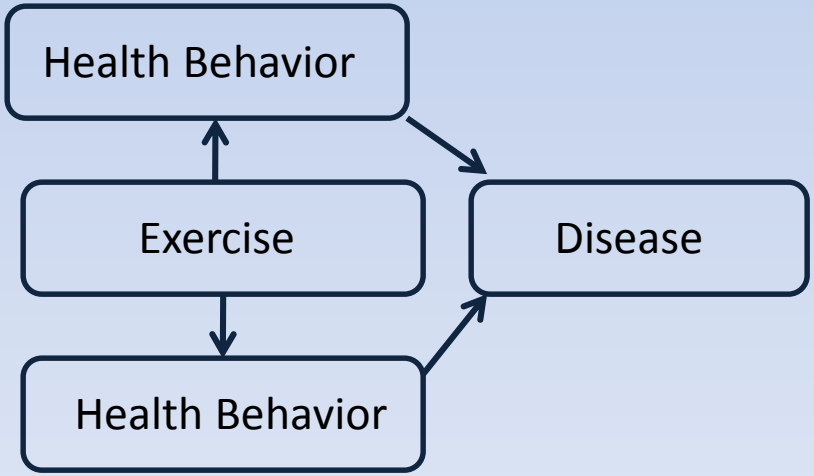
Indirect



Direct & Indirect



Direct & Indirect through Multiple Behaviours



WEIGHT CONTROL

- Set point theory (hypothalamus)
- Fat cells
- Isocaloric balance
- Positive caloric balance
- Negative caloric balance
- RMR (RESTING METABOLIC RATE)
- EMR (EXERCISE METABOLIC RATE)

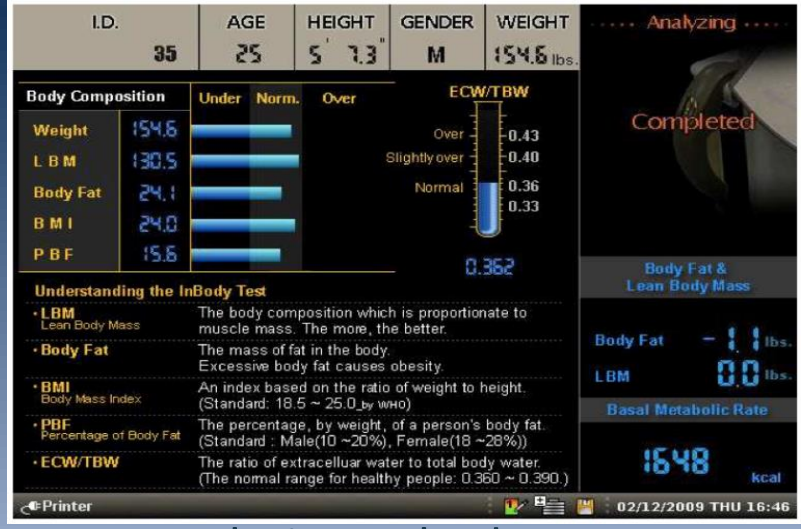
- 15 % in sedentary
- 100 % in active

Biological Plausibility Obesity

- Increase in fat mass and the development of obesity occur when energy intake exceeds total daily energy expenditure for a prolonged period
- Total energy expenditure represents the sum of

1) resting energy expenditure for maintaining basic body functions (approximately 60 percent of total energy requirements)
2) the thermic effect of eating for digestion, absorption, transport, and deposition of nutrients (about 10 percent)
3) non-resting energy expenditure, primarily in the form of physical activity (about 30 percent)

Body Composition InBody720



The body composition analyzer InBody720 is a precision clinical diagnostic tool featuring the world leading technology of BioSpace

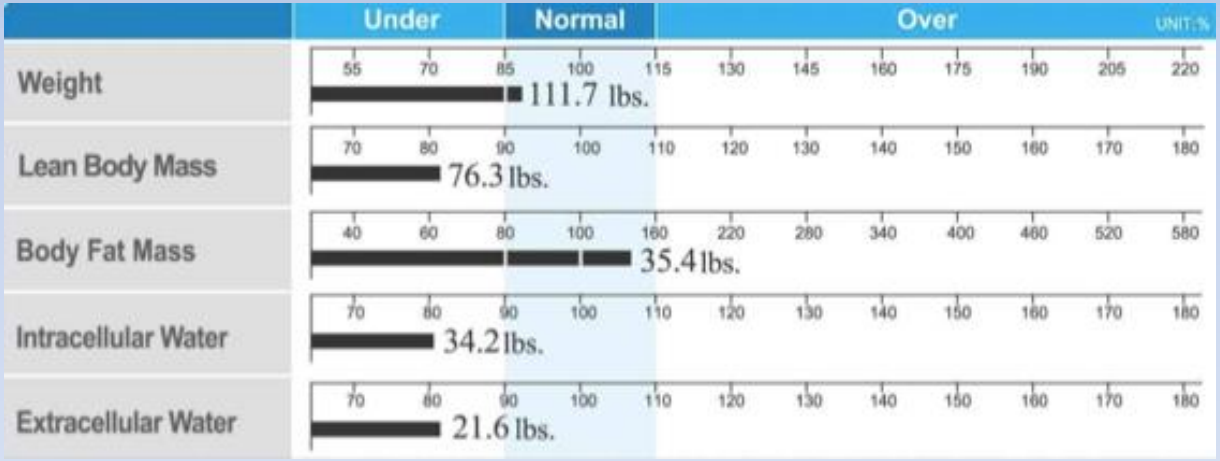
- InBody720 is the first version to use the reactance analysis method to measure the state of the human body
- InBody720 uses bioelectrical impedance analysis – the method by which low electrical currents are introduced to the body

MANAGEMENT & RESULTS

results: output items

Body Composition Analysis

- The horizontal bar graph helps you understand your body composition stated compared to standard values
- The length of the bar graph indicates where the examinee falls in relationship to the normal range
- Each compositional element has its own absolute value



Vitabot Nutrition Analysis:
A NEW Approach... for REAL SUCCESS

- Real success comes from complete balanced nutrition at the correct from real healthful foods.
- Vitabot works with client like private nutritionist to help create completely balanced diets using your favorite foods.
- Vitabot helps client to make lists of foods that you enjoy eating for Breakfast, Lunch, Dinner, and Snacks.
- **Vitabot helps client completely balance 26 nutrients in minutes**
- Vitabot works with client to create personalized meal plans that meet the highest standards.
- Vitabot takes a complex task and makes it easy and fun!

Biological Plausibility Osteoporosis

- Bone is a dynamic tissue that is constantly remodelling its structure by resorption and formation
- Physical activity, through its load-bearing effect on the skeleton, is likely the single most important influence on bone density and architecture
- Bone cells respond to mechanical loading by improving the balance between bone formation and bone resorption, which in turn builds greater bone mass
- The higher the load, the greater the bone mass; conversely, when the skeleton is unloaded (as with inactivity), bone mass declines. Glucose-6-phosphate, prostaglandins, and nitric oxide play a role in mediating the mechanical loading effect on bone

Achilles Model *EXPII*

The **Achilles EXPII** is an ultrasonometer designed to measure ultrasound transmissions through the os calcis (heel bone) of a client

Figure 3-1 Position the Calf Support

RESULTS

- T-score represents the individual's Stiffness Index above or below a reference "Young Adult" mean
  - It's expressed in standard deviation units
- The "% Young Adult" expresses a person's Stiffness Index value as a percentage of the "Young Adult" mean for women aged 20 to 35 years
  - Green region: marks on standard deviation (-1)
  - Yellow region: represents range from -1.5 to -2.5 SD
  - Red region: values below -2.5 SD

Biological Plausibility Depression/Mood

- exercise induces changes in brain neuroreceptor concentrations of monoamines (norepinephrine, dopamine, or serotonin)
- exercise induces changes in brain neuroreceptor concentrations of endogenous opiates (endorphins and enkephalins)
- increased core body temperature that occurs from physical activity may also decrease muscle tension and provide for relaxation effect
- Distraction or time-out hypothesis

Environmental Fitness

Social Structure
- Schools
- Worksite
- Social Norms

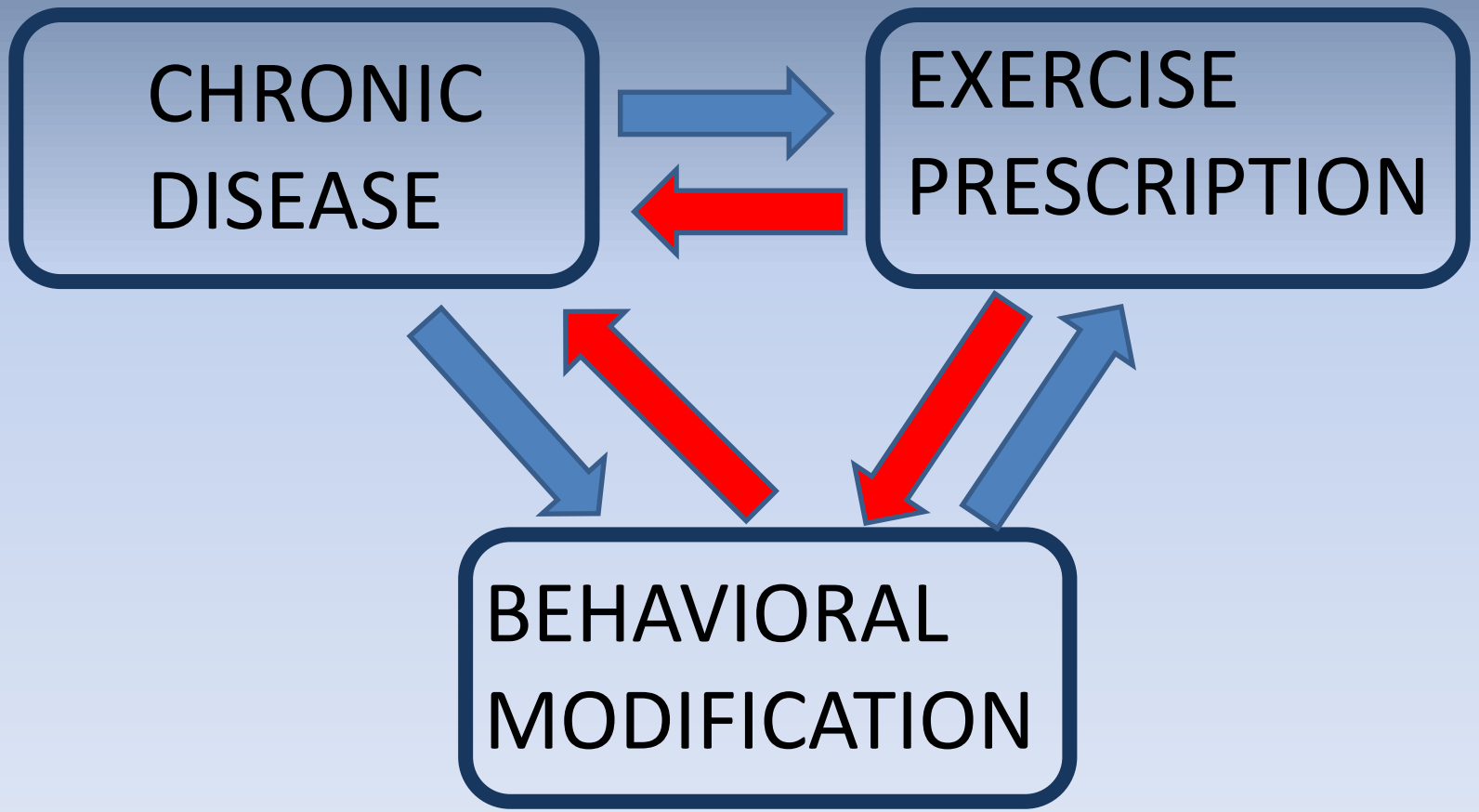
Physical Structure
- Urban Planning
- Transportation
- Facilities

Ecological Integration
- Energy
- Pollution
- Climate

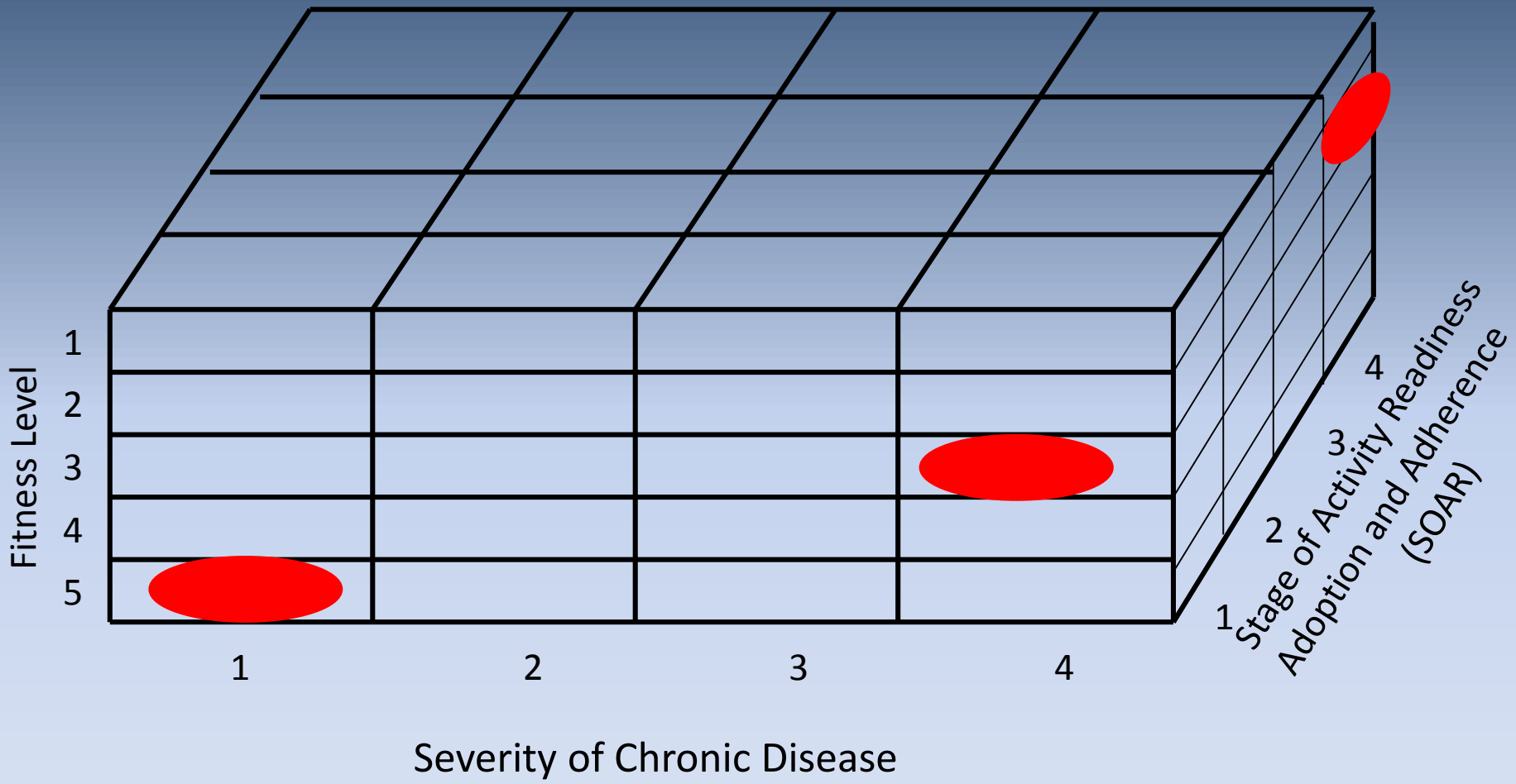
Physical In-Activity


It depends, where do you want to get to?
Which Way Should I Go?

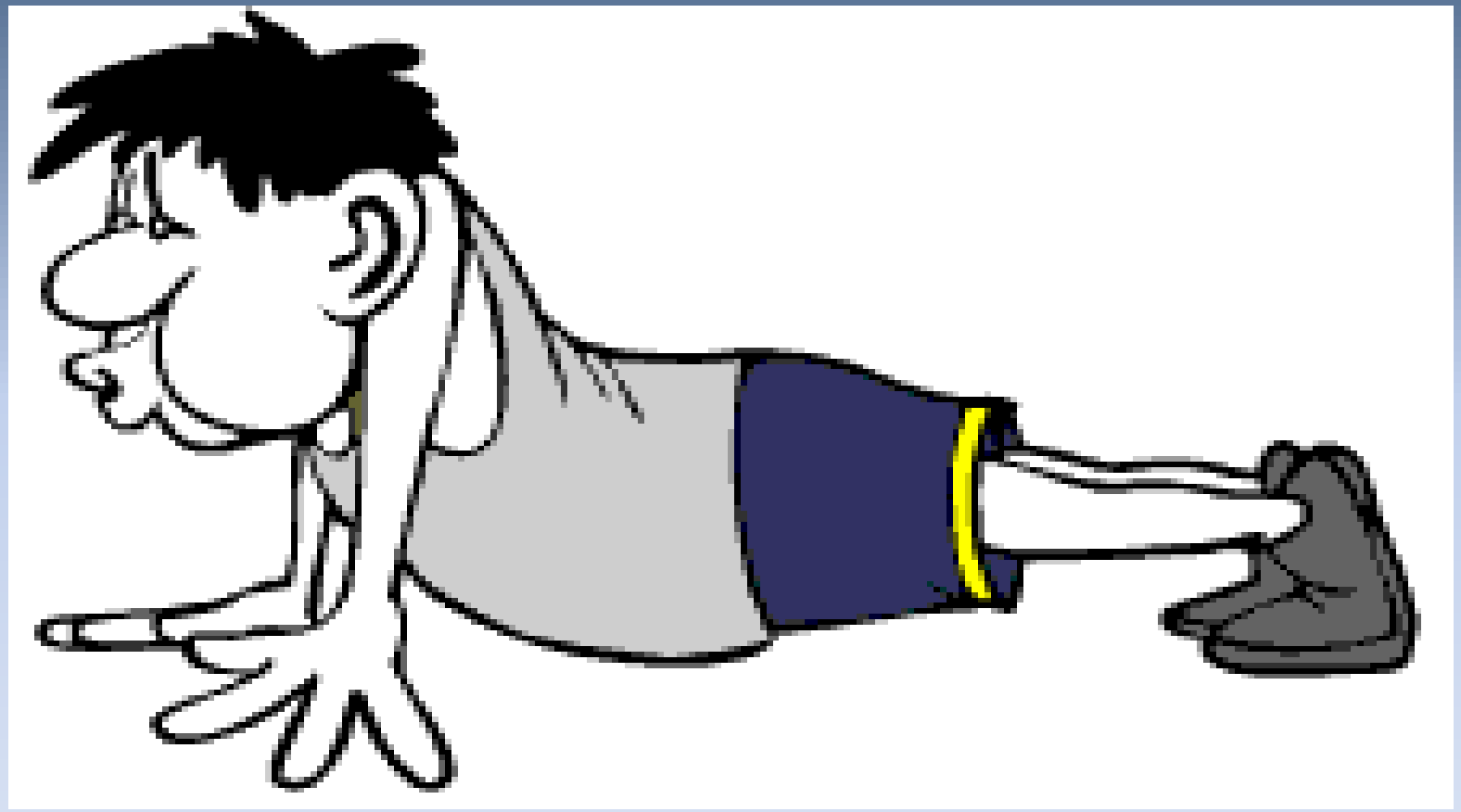
The Relationship



CD Program Framework



LIVESTRONG!!



THANK YOU