FILEX 2012

The Future of Fat Loss

with

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Influences on 4-year weight change

Dietary factors linked to weight gain

¾ Potato chips (+1.69)
¾ Potatoes (+1.28)
¾ Sugar-sweetened beverages (+1.00)
¾ Unprocessed red meats (+0.95)
¾ Processed meats (+0.93)


More at Smartshape.com.au & MetabolicJumpstart.com
In one word…

…what is the future of fat LOSS?

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...what is the future of fat GAIN?
Influences on 4-year weight change

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Influences on 4-year weight change

Other factors linked to weight gain

- Alcohol use (0.41 / drink)
- Smoking – new quitters (5.17)
- Sleep < 6 > 8 hours (-0.49)
- TV viewing (0.31 / hour per day)


7 Categories of obesity contributors

<table>
<thead>
<tr>
<th>Biological</th>
<th>Medical</th>
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Environmental factors

**Personal**
- Food in house
- Cooking facilities
- Work/school
- Labour needs
- Car usage
- Ambient temp
- Family income

**Communal**
- Local shops
- Fast food outlets
- Walk ways
- Parks
- Cycle ways
- Transport
- Street safety
- School sport
- Fitness centres

**National**
- Laws / taxes
- Food technology
- Food industry
- Food prices
- Urban design
- Health funds
- Petrol prices
- Smoking laws
- Climate

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Metaflammation

More at Smartshape.com.au & MetabolicJumpstart.com
What is metaflammation?

- Form of low-grade systemic inflammation
- Proposed hypothesis is that the human immune system reacts to stimuli to which it hasn’t had time to adapt

Metaflammation

“Metaflammation is thus to chronic disease what inflammation is to injury and disease.”

- Prof. Garry Egger

Egger, G. & Dixon, J. Obesity & global warming: are they similar “canaries” in the same “mineshaft”? MJA, 193(11/12), 635-637, 2010
Back to the future of fat LOSS?

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It's not rocket science...

Fat Activity
Intake from food

Alcohol CHO Protein

BMR
Expenditure Activity TEF

GAIN STABLE WEIGHT LOSS

BODY FAT STORES

...but...

“...it’s food, exercise & behavioural science, which is incredibly complex”

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Pills

Pharmacological treatment of overweight & obesity

Duromine  Sibutramine (withdrawn)  Chitosan  Orlistat

Appetite suppressants  Inhibitors of fat absorption

Stimulators of energy expenditure & thermogenesis

No new weight loss drug has been approved in the past 10 years!

Diet

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**Influences on 4-year weight change**

Dietary factors linked to weight loss

- Yoghurt (-0.82)
- Nuts (-0.57)
- Fruits (-0.49)
- Whole grains (-0.37)
- Vegetables (-0.22)

Four Ways nuts assist weight management

1. Whole food which takes more energy to digest
2. High-protein creating a feeling of fullness
3. Nutrient-rich, assists reduction in inflammation
4. Fat mal-absorption due to incomplete digestion

Mattes, RD, Asia Pac J Clin Nutr, Energetics of nut consumption, 2008 Supp 1:337-8

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Dairy and fat loss

- Study – 3 groups randomised to:
  - 1. low calcium
  - 2. high calcium from supplements
  - 3. high calcium from dairy

- Greatest weight loss in high dairy group, despite similar calcium groups in 2 and 3


Dairy and fat loss

- Dairy nutritional profile: low GI CHO, high-quality protein, calcium.
- Protein: whey + casein => satiety (GLP-1, CCK).
- Protects muscle mass on calorie-restricted diets.
- Population studies show low calcium/dairy intakes are associated with greater body fat and risk of wt gain over time.


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Dairy and fat loss – the mechanism

Low calcium intake

- PTH + Calcitriol

- Intracellular calcium

- Gene expression

Expression of genes involved in fat synthesis


What about diet foods?

“Whilst popular diets, liquid diets and non-prescription diet pills were not linked to successfully losing weight, participants who managed to shed over 10% of their body weight reported they were less likely to consume diet foods and products compared to those who lost less weight.”

Calorie conscious, nutrient-rich eating
Hormones

The insulin barrier

- Blocks fat burning
- Promotes abdominal fat storage
- Causes inflammation
Other hormonal barriers

- Low DHEA & testosterone in men & women reduce the ability to burn fat & build muscle
- Oestrogen in men promotes fat storage
- Imbalances in oestrogen & testosterone in women cause fat storage
- High androgens in women promotes insulin resistance

The cortisol barrier

- Higher cortisol levels linked to higher neuropeptide-Y (NPY) which triggers appetite
- Promotes abdominal fat storage

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Doing the math on calories

1 pound fat = 3500 Cal

Therefore, to lose 1 pound of fat a week…

3500 Cal / 7 days = 500 Cal / day

You need to reduce & maintain daily calorie intake 500 Cal below energy balance!

Stress Management
The vicious circle of stress

“When you go up in weight, your body also becomes under stress. That probably has a self-reinforcing effect – so you get even fatter. Should our hypothesis turn out to be correct, it would mean that you’ll need to break this stress pattern if you want to halt the weight increase.”

20 Jan 2012. Dr Brynar Foss, University of Stavanger in Medical News Today

Quotes about stress

“I try to take one day at a time, but sometimes several attack me at once.”
- Jennifer Yane

“One of the symptoms of an approaching nervous breakdown is the belief that one’s work is terribly important.”
- Bertrand Russell

“The mark of a successful man is one that has spent an entire day on the bank of a river without feeling guilty about it.”
- Author Unknown

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The flow zone

3 Ways to deal with stress

- Change the stressor
- Change the stressee
- Escape

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Sleep Strategies

More at Smartshape.com.au & MetabolicJumpstart.com
Are you sleep deprived?

- Need an alarm clock & abuse the snooze
- Struggle to get out of bed in the morning
- Feel tired, irritable & stressed
- Have challenges remembering & concentrating
- Slow with critical thinking
- Fall asleep in your chair after dinner in front of TV
- Fall asleep after heavy meal or low dose of alcohol
- Feel drowsy while driving
- Oversleep or binge sleep on weekends
- Can see that you are tired
Are you masking excessive sleepiness?

- Motivation (tired but wired)
- Light & loud environment
- Caffeine
- Food

Stress & Fatigue

- Stress increases cortisol & epinephrine (adrenalin) ready for “fight or flight”
- Adrenaline provides a temporary relief from fatigue followed by a rapid physical & emotional decline

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The sleep barrier

- In Adults & children hours of sleep / night related to BMI
- In animals, sleep deprivation → hyperphagia
- In humans, sleep deprivation
  - ↓ leptin, ↑ ghrelin & ↑ appetite
- Additional mechanisms may be
  - ↓ TSH & ↓ glucose tolerance
- In the US, average hours sleep
  - from 9hr to 7hr / night over past several decades

Keith, S.W. et al., Putative contributors to the secular increase in obesity: exploring the roads less travelled, AJCN 30:1585-1594, 2006

How poor sleep affects fat loss

“A review of the evidence shows how short or poor quality sleep is linked to increased risk of obesity by re-regulating appetite, leading to increased energy intake.”

22 April 2012. Dr Kirsten Knutsen, Medical News Today
Sleep strategies

- Schedule your sleep as you schedule your work
- Set your alarm to go to bed
- Avoid caffeine & alcohol before bed time
- Pre-sleep relaxation
- Read a ‘sleepy’ book
- Make the room dark (maintains melatonin)
- Run a fan to create white noise
- Make a mid-week early night appointment
- Discuss & plan sleep strategies with family
- Schedule day-time naps

Make sleep a priority

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<td>Diet</td>
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<td>Corticosteroids</td>
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Harder to change

- Gender
- Age
- Race
- Genetics
- Medical
- Biological
- Metabolic
- Critical periods
- In utero
- Infancy
- Childhood
- Puberty
- Pregnancy
- Breastfeeding
- Menopause

Change Zone

- Restless
- Attitudes
- Motivation
- Self-esteem
- Body image
- Stress/insomnia
- Grief
- Depression
- Anxiety
- Binge eating
- Meal skipping
- Fat
- SPA
- Fat storage
- Fat
- Weight cycling
- Eating
- Shift work
- Sleep

Harder to change

- Personal
- Parenting
- Education
- Family time
- Cuisine
- Divorce
- Stigmatisation
- Work/school
- Peer support
- Food advertising
- Labour needs
- Car usage
- Consumer demand
- Ambien temp
- Food
- Social norms
- Recreation
- Family income
- Celebrations
- Climate

Mechanisation

- Automation
- Urbanisation
- Globalisation

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Watch this space for other factors & strategies

- Viruses (biological & social)
- Intestinal floral balance
- Endocrine disruptors
- Higher gravita (maternal) age
- Changes in ethnicity & age
- Genetic selection

What could the future look like?

- A prioritisation of shape change versus weight loss utilising exercise as a key behaviour.
- A commitment to core dietary accountability.
- A nutrient-rich revolution, where we harness the metabolic benefits of whole foods, within a calorie controlled diet.
- An appetite management approach that equips people to confidently eat less.
- A system to address hormonal imbalances.
- An integration of mood management, including stress and sleep management.
What are you going to do?

Thank you for coming this morning

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