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(Plenary)

17:15 - 17:30 Fit and Fat - Is This Our Best Hope for the Future?

Fit and Fat– Is this our best hope for the future?

Dr Chris Milne
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Overview

- ▶ Complications of obesity
 - ▶ Benefits of exercise
 - ▶ Origin of the fit and fat concept
 - ▶ Original data
 - ▶ Subsequent studies
 - ▶ Current state of play
 - ▶ Conclusion
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Health risks of obesity



Benefits of exercise



Origin of the fit and fat concept

- ▶ Steven Blair, epidemiologist
- ▶ Past President of ACSM
- ▶ Aerobics Centre, Cooper Institute, Dallas USA
- ▶ Gathered data from 1979–2003
- ▶ Initial publication JAMA 1989;262:2395–2401
- ▶ Reported to the President's Council on Physical Fitness and Sports



Original Data

- ▶ Aerobics Centre longitudinal study 1979–2003
 - ▶ 43,265 participants
 - ▶ Questionnaire– medical history, lifestyle
 - ▶ Examination– height, weight, BMI, waist circumference, % body fat, BP
 - ▶ Investigations–Treadmill test, bloods– fasting lipids and glucose
 - ▶ Follow up– until they died or 2003
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Results

- ▶ 46% of obese participants were metabolically healthy but fit
- ▶ These people had a 38% lower risk of death from any cause than the metabolically healthy normal weight participants who were in a lower fitness category [ref Eur Heart Journal 2012]

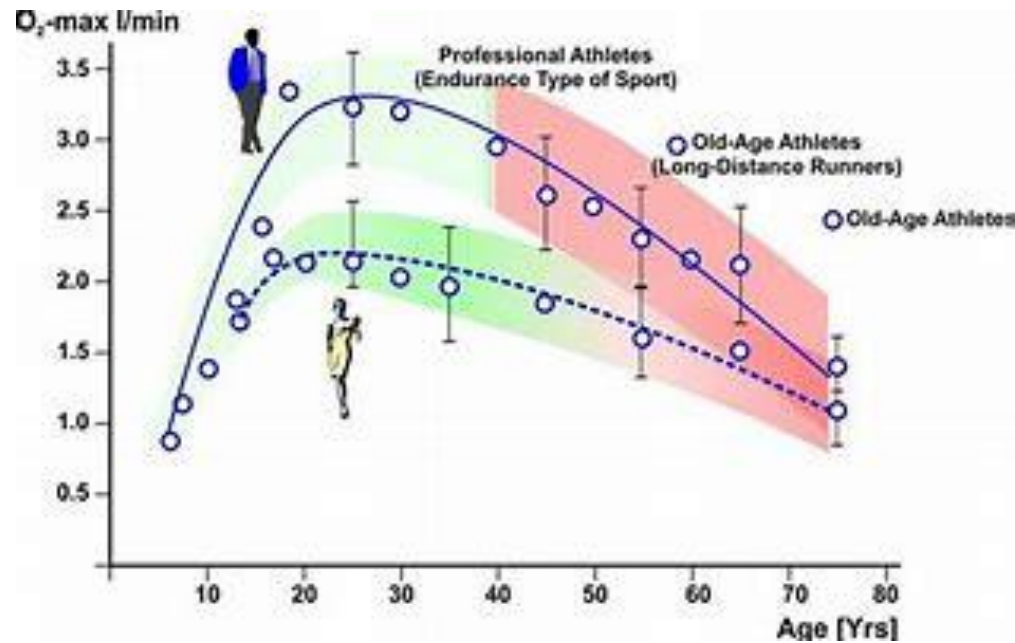


How common is it to be fit and fat?

- ▶ Duncan et al 2010, aim– to estimate the proportion of US adults who had high CV fitness [ref J Int Behavioural Nutrition and Physical Activity 2010: 7–47]
 - ▶ Study of 4675 adults aged 20–49 years
 - ▶ Fit but fat [BMI over 30] 8.9% [95% CI 6.9–10.9%]
 - ▶ High fit but overweight [BMI 25–29] 17.4%
 - ▶ High fit but normal weight [BMI 18.5–24] 30%
 - ▶ Likely explanation for low number of fit but fat people– low level of physical activity in those who were overweight
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What happens as we age?

- ▶ Normal loss of organ system function– 10% per decade
- ▶ With aerobic training– can reduce this to 5% per decade



Words of warning to the over 40s

- ▶ It's not OK to gain weight and exercise less with each passing decade
- ▶ The focus should be on putting more effort into exercise than into staying slim
- ▶ Exercise is its own reward
- ▶ The body remains trainable into later life
- ▶ You really can 'wind back the years'



Exercise and mental health

- ▶ Low fitness was more strongly associated with the onset of depressive symptoms than was fatness, regardless of the measure of fatness used [ref Becofsky Am J Epidemiology 181[5] 2015:311–320]



Subsequent study

- ▶ Swedish study, Umea
 - ▶ 1.3 million men, recruited at age 18 when conscripted into the army, various body types
 - ▶ Top quintile in terms of fitness at age 18 were 51% less likely to die prematurely than those in the bottom quintile
 - ▶ But– the benefits of exercise were cancelled out if they were significantly overweight
 - ▶ Ref Hogstrom et al, Int J Epidemiology 2016, vol 45[4]:1159–1168
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Medically Healthy Obesity [MHO]

- ▶ Perspective of Dr Leslie Cho, Head of Preventive Cardiology and Rehabilitation, Cleveland Clinic
- ▶ Risks of MHO are similar to those people of normal weight at baseline, but this does not reliably predict future risk
- ▶ After 12 years of follow up, 50% of those with MHO had developed the Metabolic Syndrome



Harvard Men's Health Watch

- ▶ 300,000 men, studied over 4 years
- ▶ Men with initial waist circumference of 80 cm and BMI of 22–23
- ▶ Adding 12 cm to their waist over the 4 years increased their risk of heart disease by 16%



Current state of play

- ▶ Review article– Ortega et al BJSM 2018;52:151–153
 - ▶ Reaffirms the results of the original studies
 - ▶ Notes that both fitness and obesity are influenced jointly by genetic and environmental factors
 - ▶ Limitations– much less data on women than men, very limited data on children and adolescents
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Conclusions

- ▶ Fit but fat may not be our best hope, but for those who are motivated to get fit, it offers some hope
- ▶ It may offer a useful avenue for people of Maori and Pacific heritage who struggle with weight gain

