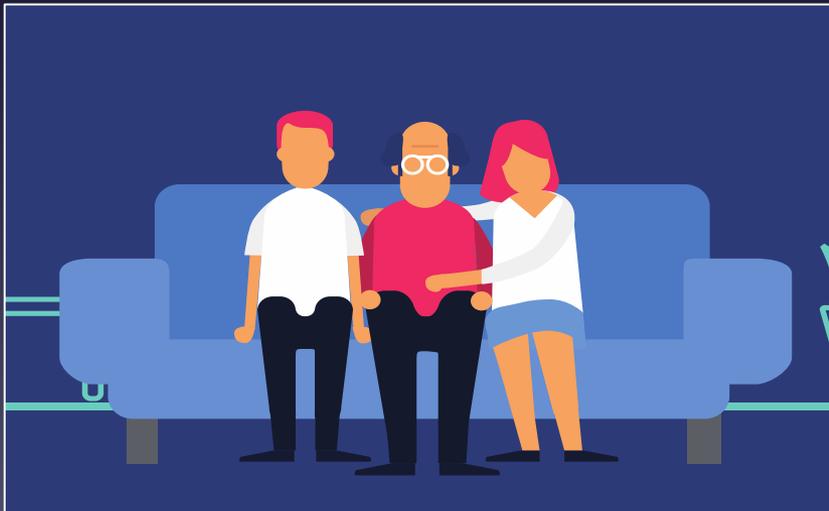


The Perioperative Vision Meet Doug !



PERIOPERATIVE MEDICINE THE SOLUTIONS

85% OF HOSPITALS IN ENGLAND HAVE IMPLEMENTED AN ENHANCED RECOVERY PROGRAMME

8 IN 10 HOSPITALS OFFER ANAESTHESIA ASSESSMENT BEFORE SURGERY

INTEGRATED CARE FOR ELDERLY PATIENTS HAPPENS IN SEVERAL NHS TRUSTS REDUCING COMPLICATIONS AND LENGTH OF HOSPITAL STAY

2 IN 5 HOSPITALS USE EXERCISE TESTING TO ASSESS RISK FOR PATIENTS

92 HOSPITALS ARE TAKING PART IN A CLINICAL TRIAL TO DEVELOP PERIOPERATIVE MEDICINE FOR PATIENTS WHO NEED EMERGENCY ABDOMINAL SURGERY

100% OF ELIGIBLE UK HOSPITALS ARE TAKING PART IN NELA

OVER 90% OF SURGICAL PROCEDURES IN THE NHS INVOLVE THE WHO SURGICAL SAFETY CHECKLIST

NELA
National Emergency Laparotomy Audit

A collection of icons used in the infographic: a clipboard with a cross, a heart with a pulse line, a bicycle, a hospital building, and an ambulance.

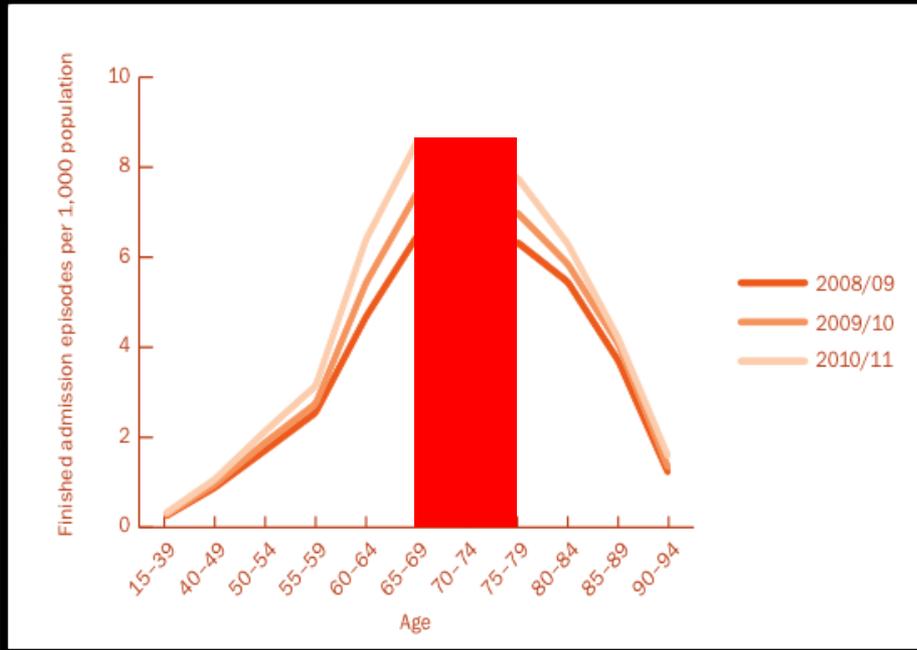
Preoperative Assessment

- Assessment of Risk Level
- Shared Decision Making
- Comorbidity (Definition, Optimisation)
- Lifestyle Choices (e.g. Smoking, Alcohol)

Perioperative Reality



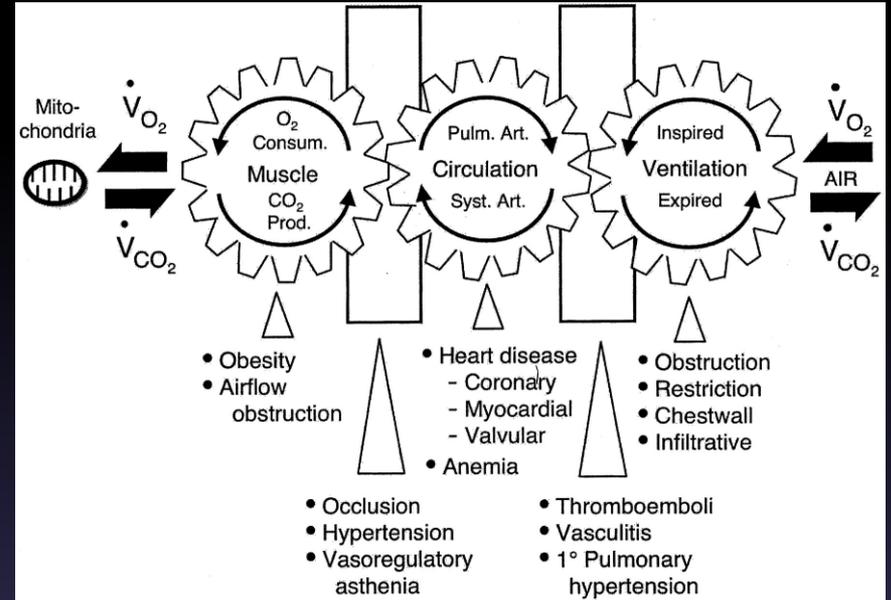
“Ageism” in Surgery ?



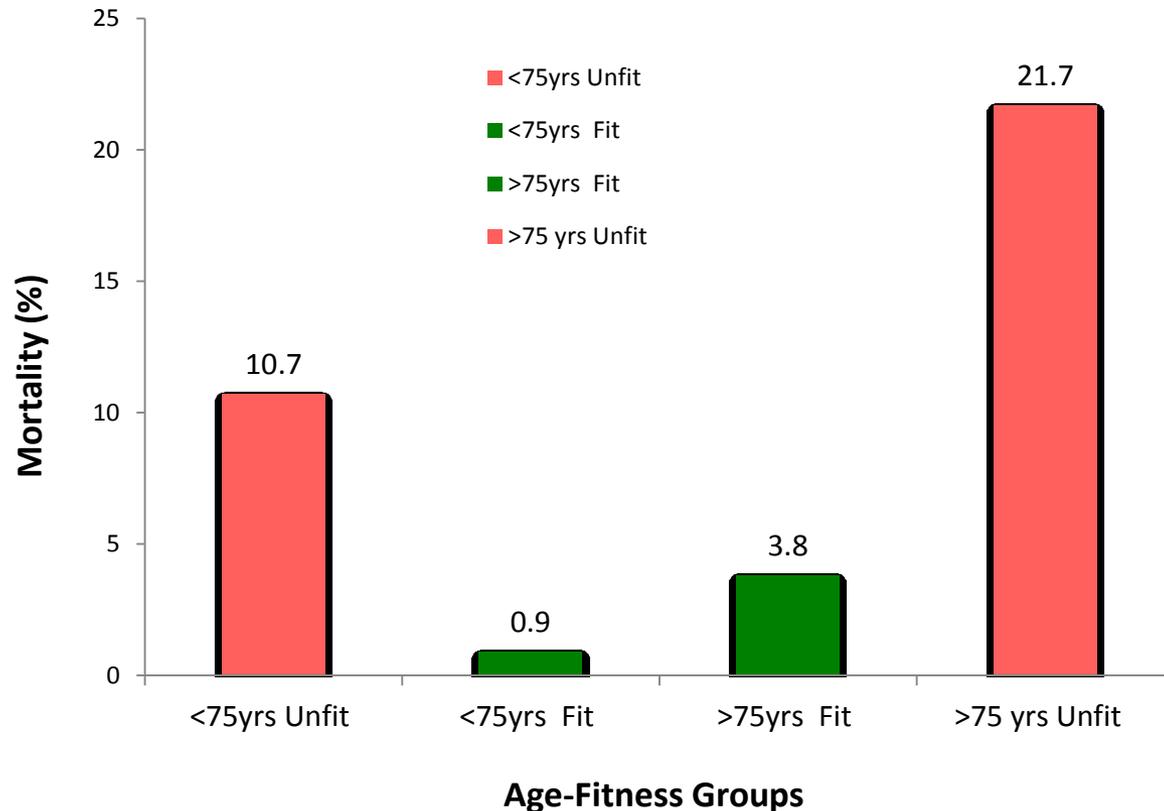
- No Denominator
 - ? lack of referral
 - ? lack of presentation
 - ? lack of operability
 - ? lack of consent
- ? Risk averse
- Equity of Access



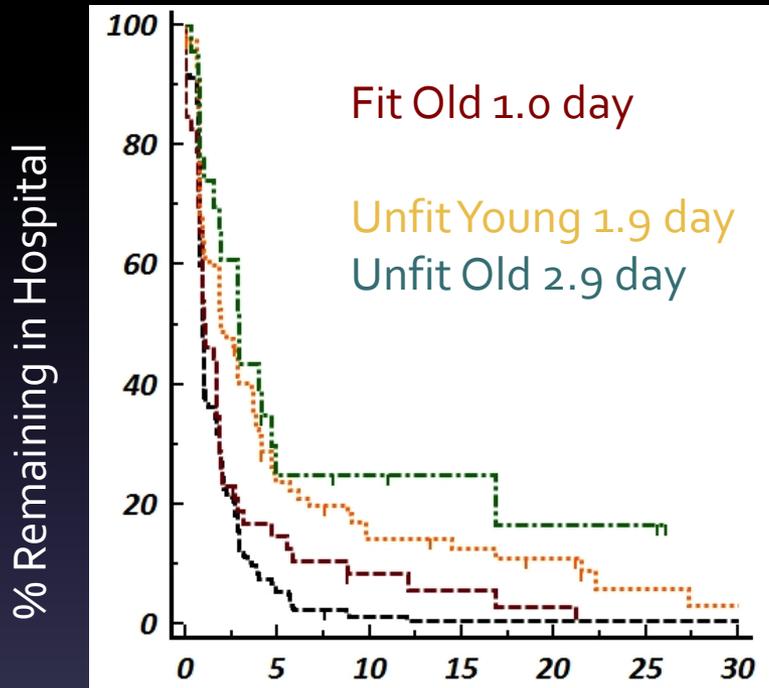
Cardiopulmonary Exercise Testing



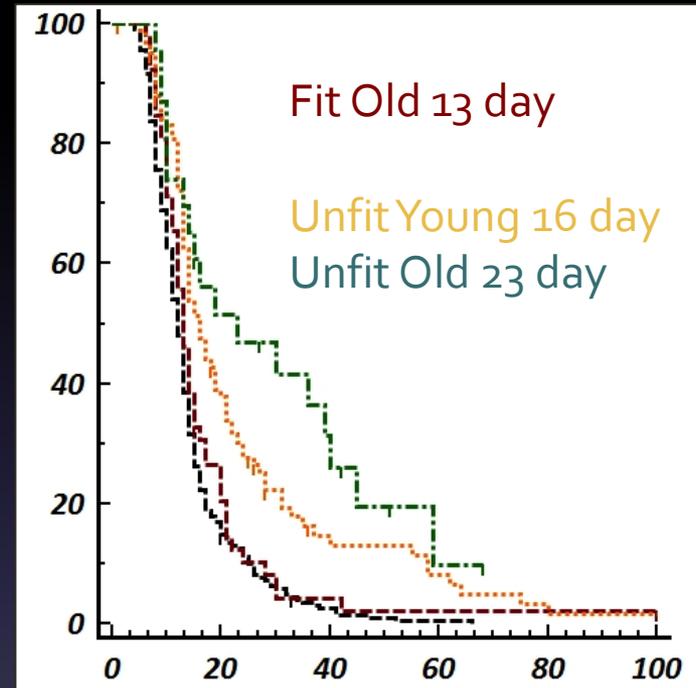
Cardiorespiratory Fitness Predicts Mortality and Hospital Length of Stay After Major Elective Surgery in Older People



Cardiorespiratory Fitness Predicts Mortality and Hospital Length of Stay After Major Elective Surgery in Older People



Days in Critical Care



Days in Hospital

Exercise Testing Evidence

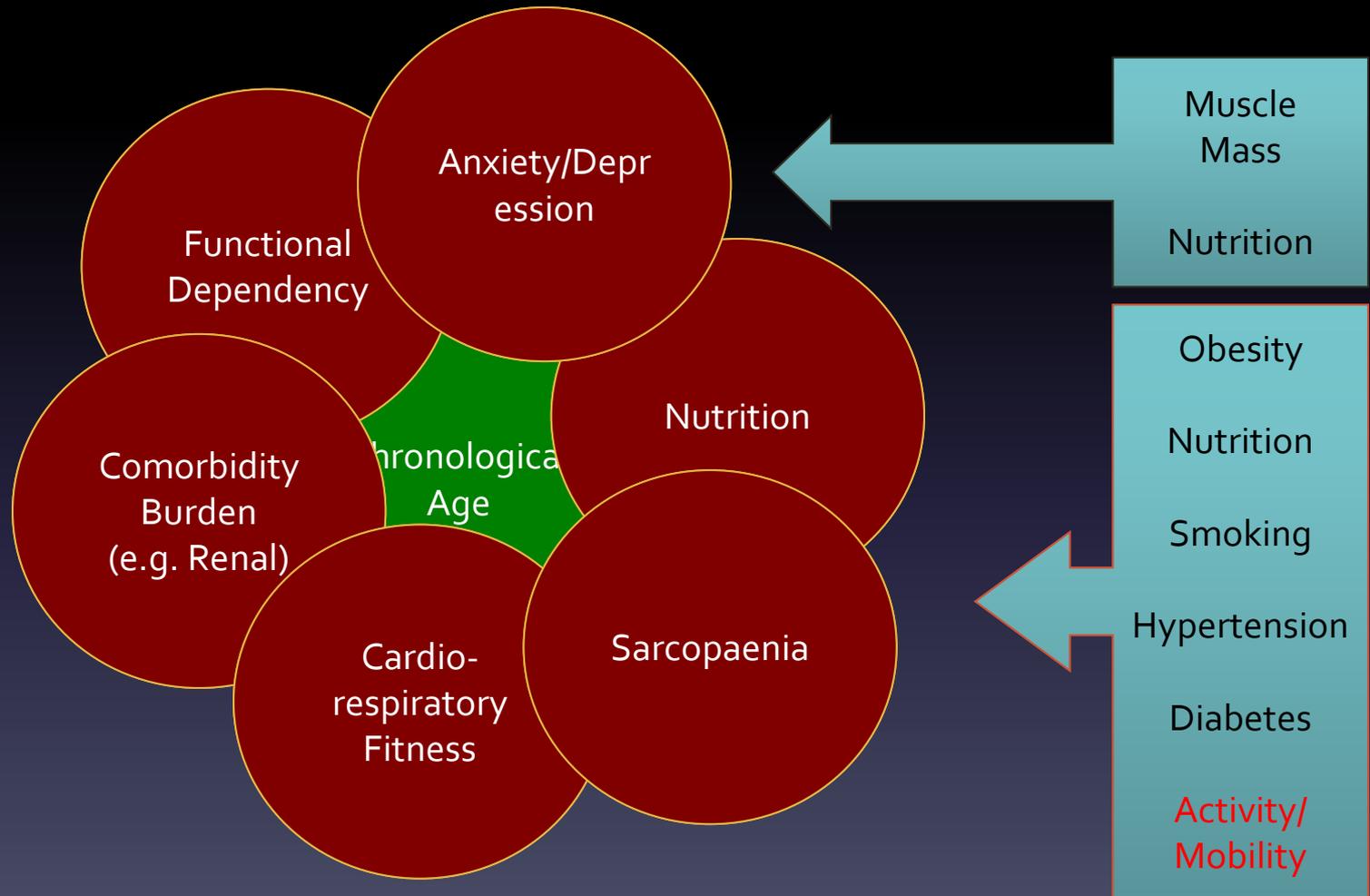
Outcome (Patient Groups)

- Colorectal
- Hepatobiliary
- Pancreatic Surgery
- Vascular
- Liver Transplantation
- Oesophageal
- Obesity
- Renal Transplant

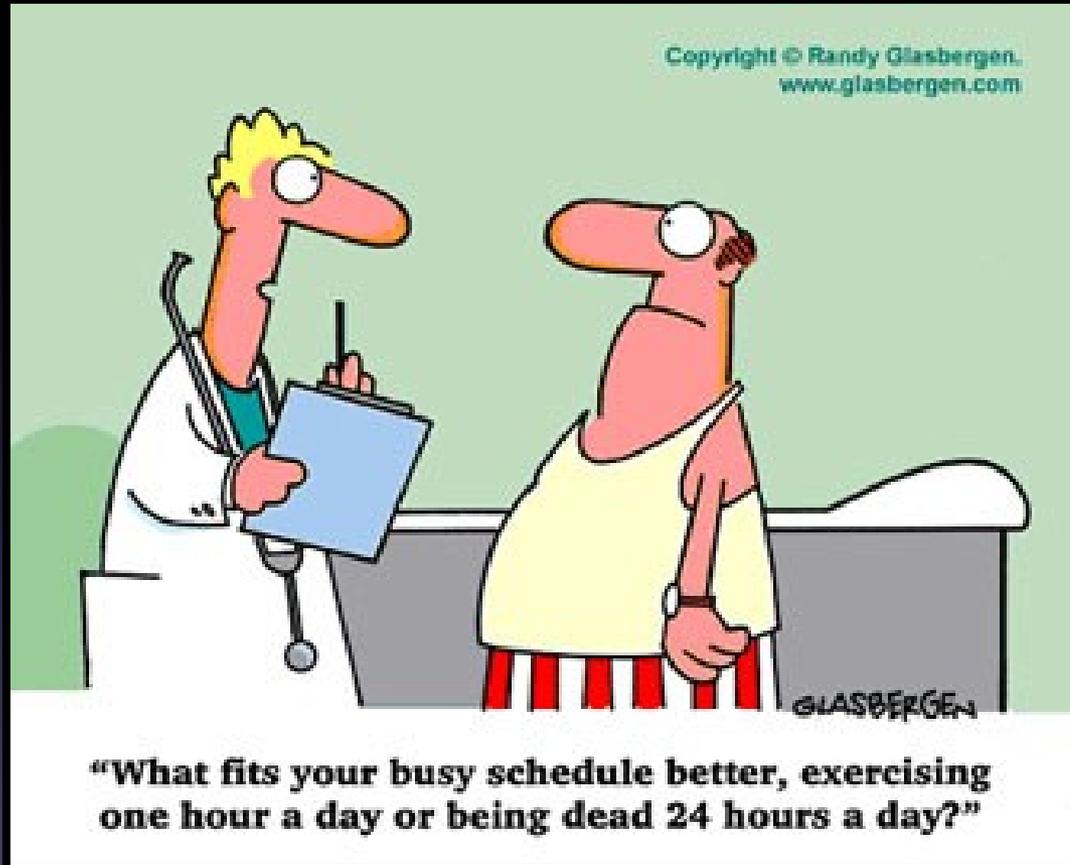
Diagnostic

- Pulmonary Hypertension
- Cardiac Limitation
- Respiratory Limitation
- Pulmonary shunting
- Ischaemia
- Aortic Stenosis

Preoptimisation



Exercise Therapy



(1) Exercise Referral Context

Exercise referral scheme (typically a 10-12 week, leisure centre based).

Comments

- Weak evidence for an long term increase in physical activity
- No evidence to support benefit to other outcomes (e.g. QOL).
- ? Value compared with alternative interventions to promote physical activity (e.g. behaviour change)

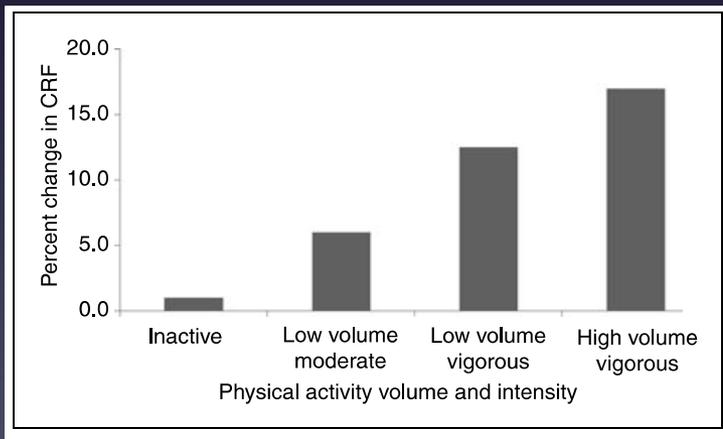
(2) Physical Activity vs Exercise

Physical Activity

- Bodily Movement via skeletal muscles
- Energy Expenditure
- Correlation with fitness

Exercise

- Bodily Movement via skeletal muscles
- Energy Expenditure
- **HIGH** Correlation with fitness
- **Planned, structured and repetitive movements**
- **Key objective is to improve physical fitness**



(3) Surgical Timescales

- Short surgical timescales
- 4-6 weeks at worst (? Opportunity to prolong)

Vs

- Mostly 12 week exercise courses
- Unmotivated, sedentary patients
- Busy Clinicians

Preoperative Exercise



Preoperative Exercise Therapy

Preoperative aerobic exercise training in elective intra-cavity surgery: A systematic review

- 2443 Abstracts : 10 Studies included

Comments

- Feasible, safe
- Improvement in CRF (5-15%)
- Variability in studies
 - Age and risk groups (CABG, Lung Surgery, Colorectal)
 - Intervention regimes

O'Doherty A.F. et al. 2013. BJA.

Home Based ?

Home based

RCT Colorectal Surgery

38 days (median) exercise regimes

Protocolled vs Unstructured Exercise

Results

- N= 133: Mean Age 61 yrs
- 33% Respond; 38% Retain baseline; 29% Deteriorate

Problems

- Poor adherence (15-20%)
- Poor support networks (physical and social)
- Disbelief that fitness aids recovery

Carli F et al. 2010. BJS 97 1187-97

Mayo et al 2011. Surgery; 150; 505-514

Hospital Based?

Hospital Based

- Feasibility RCT
- N=16 (Surgical)
- Older Age > 65 yrs
- 3 x week ; 40 min sessions

Methods

- Qualitative Interviews
- Quantitative CRF results

Qualitative Considerations

Theme 1 – Surgical intervention and shared decision-making

- Respected the surgical team
- Right decisions regarding patient clinical care.

Theme 2 – Activity levels and physical fitness prior to surgery

- Understanding that Physical fitness was important before surgery
- Responsibility to play an active role in their own recovery.
- Needed support and guidance of a healthcare professional.

Theme 3 – Pre-operative exercise programme

- Surgery focused mind and increase motivation.
- Training was manageable and challenging enough to produce subjective physical benefits.
- Attending the hospital gym three times per week was just acceptable over a six-week period.

Exercise in Surgery

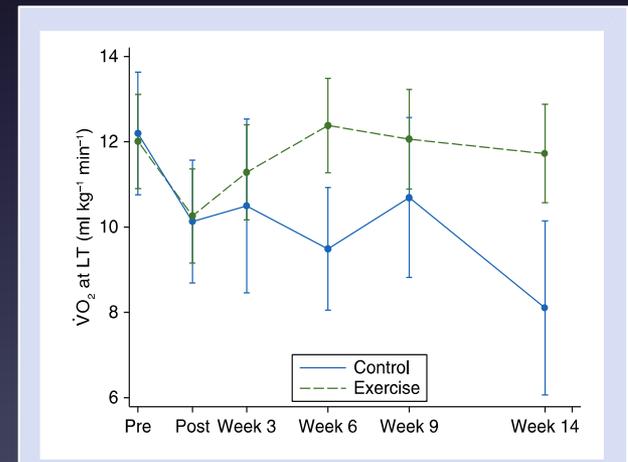
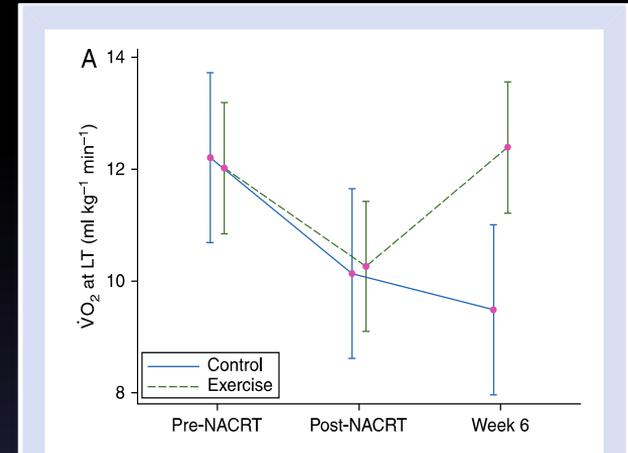
- 80% - CRF improvement (variable)
- Non-exercisers want to exercise (Hawthorn Effect)
- Recruitment – Only 20% of eligible numbers
- Barriers to Preoperative Exercise
 - Travel , Access and Commitments
 - Contactability
 - Fitness

Retention Improves Response

RCT

Hospital Based

- 39 subjects
- Colorectal Surgery
- Pre and post Chemotherapy
- 90% Adherence
- 15% reduction in function
- Negated by Structured training



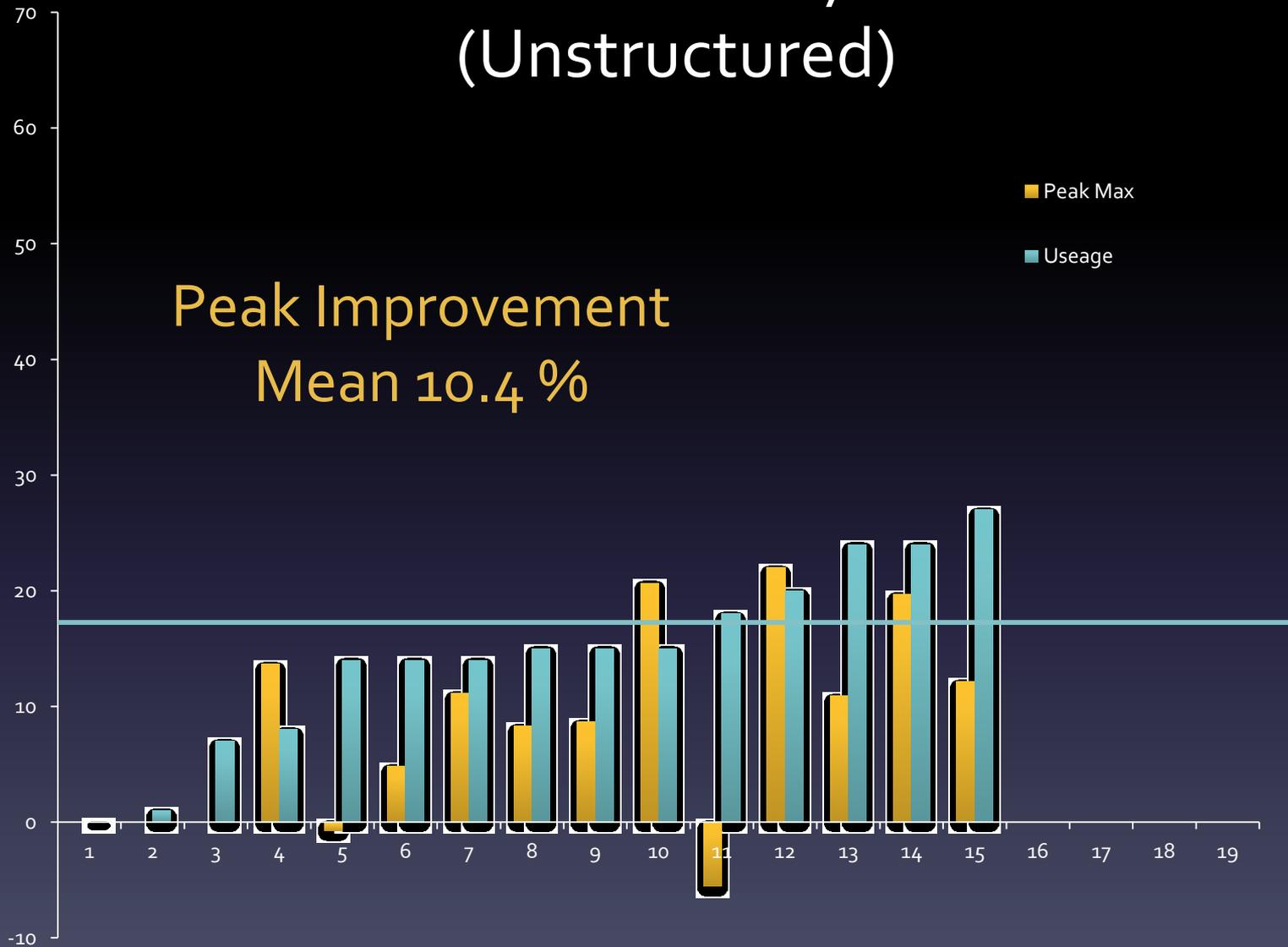
Community Based

- Community - based exercise programs
- Volunteers (65-87 yrs)
- Remove Barriers (Travelling, Access, Contact, Commitments)
- N= 53 : Delayed control study
- Local gyms (Live Well Program (n= 19) and Private Gym (n=34))

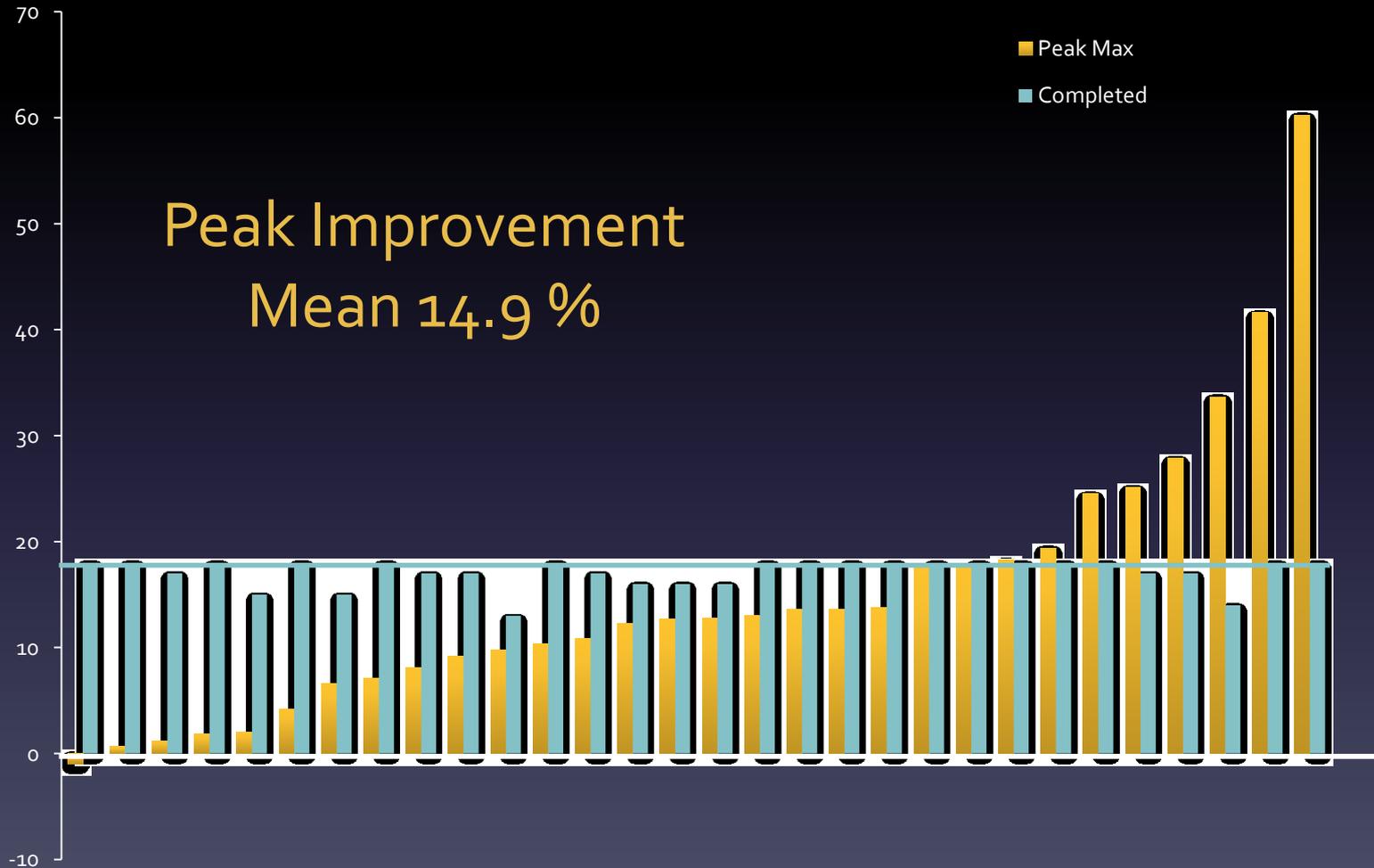
Regime:

- Supervised
- Normal Unstructured vs High Intensity Structured
- Up to 6 weeks
- Offered 3 x week

Community (Unstructured)

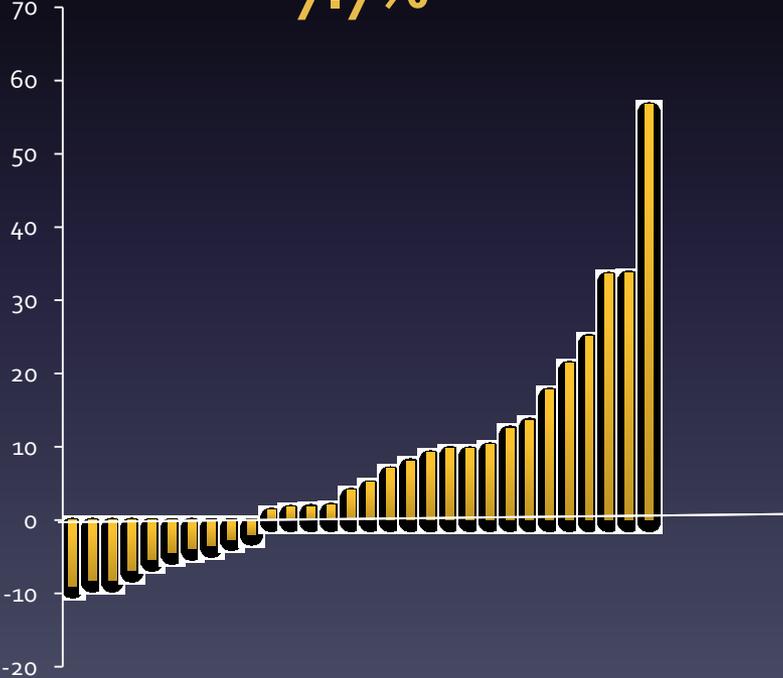


Community (Structured)



Duration

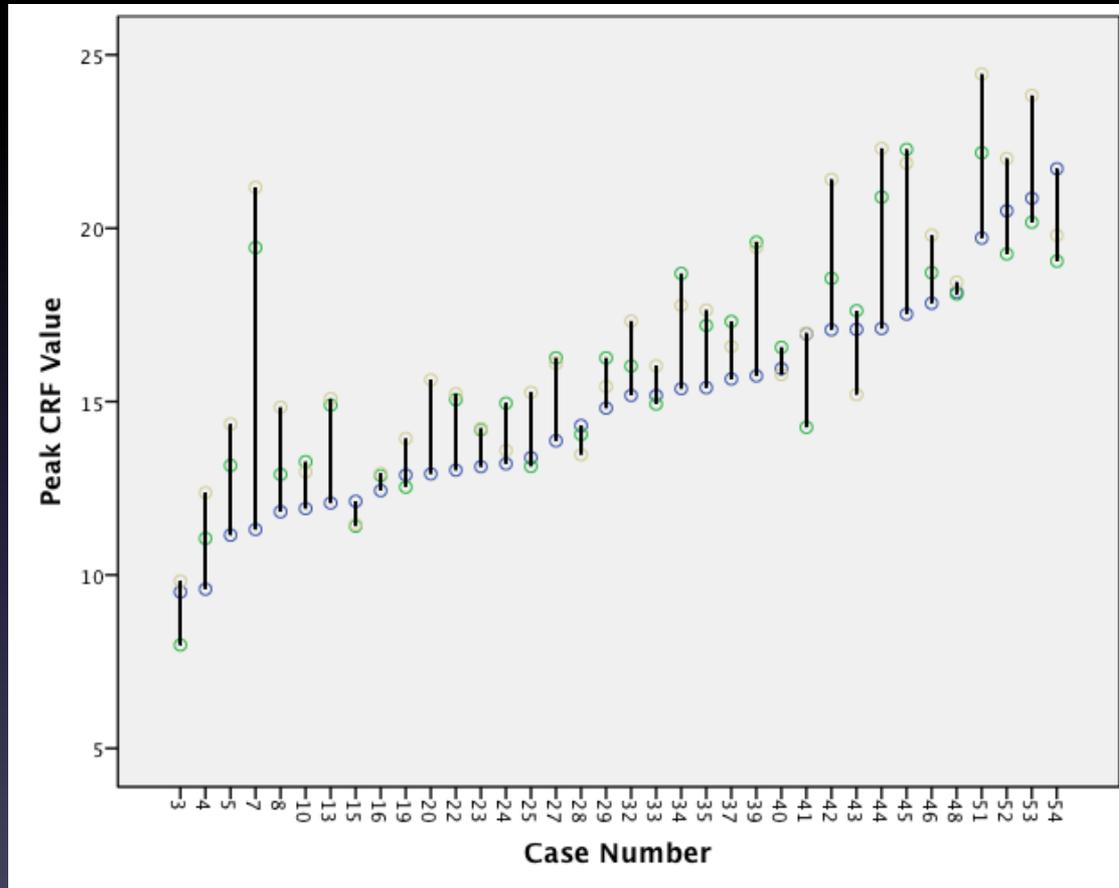
**Peak Improvement
4 Weeks
7.7%**



**Peak improvement
6 Weeks
14.1%**



Fitness Matters ?



Conclusions

- Community setting removes many barriers
- Structured, Intense program is acceptable
- Variable response (expected)
- Response in 4 weeks (60%)
- 6 weeks exercise improved response
- Initial Fitness unrelated to response

Questions Yet to Answer

- Will it improve Surgical outcome ?
- Will it improve Patient outcomes
 - Rehabilitation ?
 - Functional Recovery
 - QOL
- Will it be maintained ?
- Is it scalable
- ? Economic Value

What we Need to Happen

- Co-design and development of newer pathways and prototypes
- Collaborations key to success
- Primary Acute Care Networks
- Behavioural components to be incorporated

