

Prehabilitation - the next step Cynsefydlu - y cam nesaf

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Contemporary surgical controversies



Optimum treatment

Which surgeon

Which hospital

Centralisation

Staging strategies

Neoadjuvant ChemoRx

Which operation

League tables

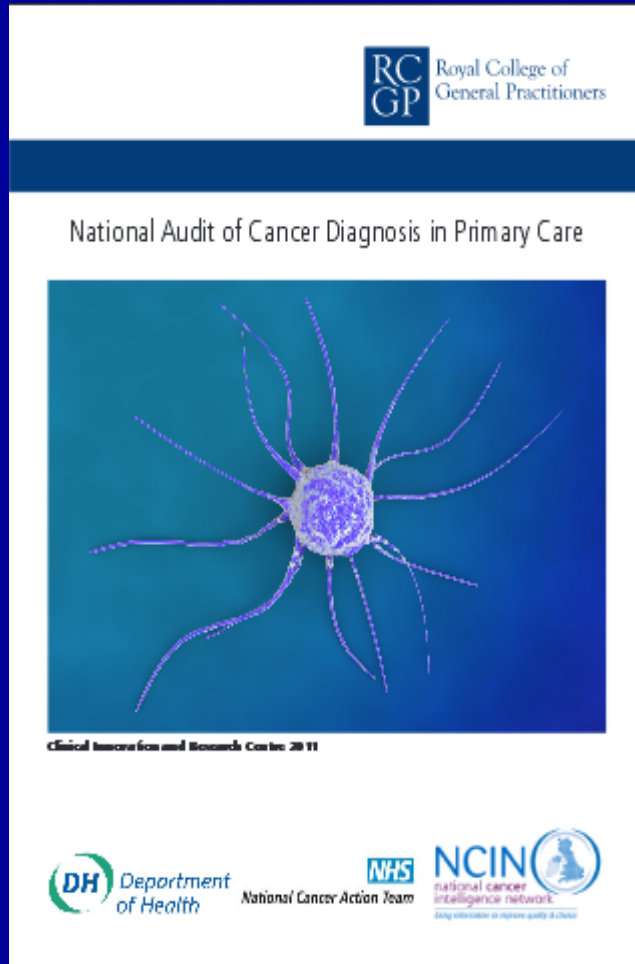
Gen surg reconfig

Population of Wales

In Wales, our population is more aged,
has poorer general health and
increased deprivation than England

| | | | |
|------|-------------|-----|---------------------|
| 20% | Smoke | 20% | High BP |
| 40% | Alcohol + | 13% | Respiratory disease |
| 34 % | No exercise | 12% | Mental health |
| 58% | Overweight | 9% | Heart disease |
| 22% | Obese | 7% | Diabetic |

Impact of Poor Health Status



Patients presenting with suspected symptoms of cancer in Primary Care present with other co-morbidities

In addition, they also present with fatigue, anaemia, weight loss, breathlessness and nausea and vomiting

Impact on Cancer Outcomes

Socioeconomic status, health literacy and age are associated with significant disparities in cancer-related outcome

Modifiable

- Smoking and Alcohol
- Obesity
- Co morbidity
- Anaemia
- Poor Nutrition
- Fitness
- Emotional capacity

Cancellations and Delays to Treatment

Surgery In Wales

- Each year circa 70K operations cancelled
- 10%-20% for medical or 'fitness' reasons
- Cancellations for medical reasons 7K each year
- No less than 25 patients per health board each week

Source: FOI Plaid Cymru

Chemotherapy

- **25 % of patients delayed for medical reasons**

Wasserman, Boulos, Hopman, Booth, Goodwin, Biagi. 2015. American Society of Clinical Oncology Journal of Oncological Practice 2015

Marathon des Sables



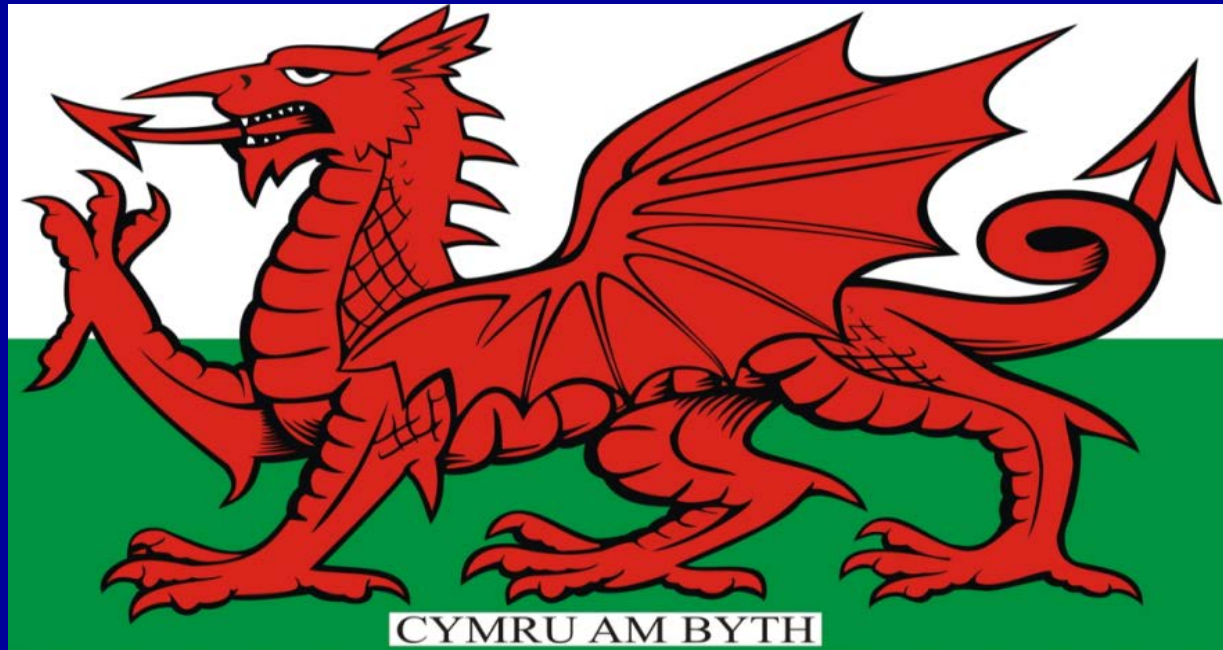
Marathon de Cancer



Cancer prehabilitation is defined as:

“ A process on the cancer continuum of care that occurs between the time of cancer diagnosis and the beginning of acute treatment and includes physical, nutritional and psychological assessments that establish a baseline functional level, identify impairments, and provide interventions that promote physical and psychological health to reduce the incidence and/or severity of future impairments”

National Prehabilitation and Optimisation Programme (POP)



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When to Start Prehab?

- Mindful of stage migration of lung cancers
- Prehabilitation needs to be timely and not hold up treatment in any way
- 1st point of contact in secondary care
- Optimise patient whilst diagnostics and decisions being made pre-treatment

'Holistic' Prehabilitation

- **Physiotherapy** – Cardiovascular exercise, respiratory muscle training, education and pharmacological agents
- **Occupational Therapy** - Optimise daily function, fatigue management / breathlessness management, emotional coping strategies for anxiety and / or depression etc.
- **Dietetics** -Assessment of nutritional status, Optimising nutritional status, Maintaining nutritional status, Pre-surgery CHO Loading
- **Anaesthetic involvement early**

**Can this happen in Primary Care
when the patient first enters the
health care system?**

FIT FOR LIST?

FUNDED BY WALES SCHOOL OF PRIMARY CARE

**Can the Feasibility and Appropriateness
of a Primary Care Optimisation Bundle be
demonstrated in Patients undergoing
Treatments for Cancer?**

Aim

To develop and pilot a Fit for List, Optimisation Care Bundle that will detect potential risk factors in Primary Care, enable subsequent timely intervention and result in improved preparation of patients, who may undergo surgical or oncological intervention.

Summary

Pre treatment optimisation in primary care is feasible

- 44% of the patients recruited needed some form of optimisation
- Smoking, exercise, hypertension and diabetes main reasons
- Anaemia detected and treated in 12% of patients
- Nutrition – weight loss in 56% cancer pts and 14% non cancer pts
- High incidence of overweight or obese
- The majority of the pts were not exercising enough

UK wide Multi-centred Step Wedge Cluster RCT

In aid of

**WE ARE
MACMILLAN.
CANCER SUPPORT**

“Prehab has the potential to impact cancer outcomes more than advances in oncological treatments”

“Really important and exciting area for research”

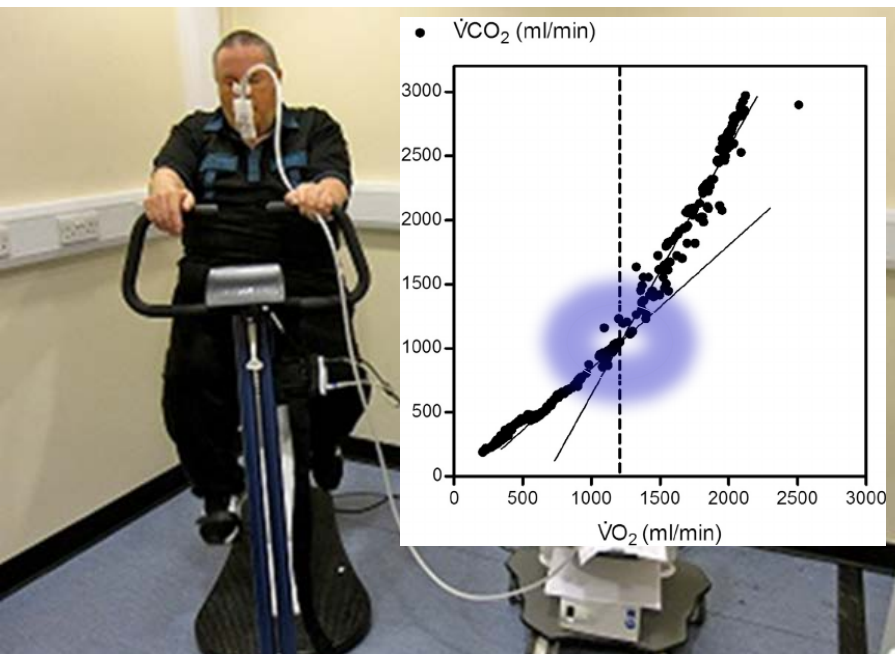


Samuel H. Golter

“There is no profit in curing the body, if in the process, we destroy the soul.”



Pre-operative exercise testing

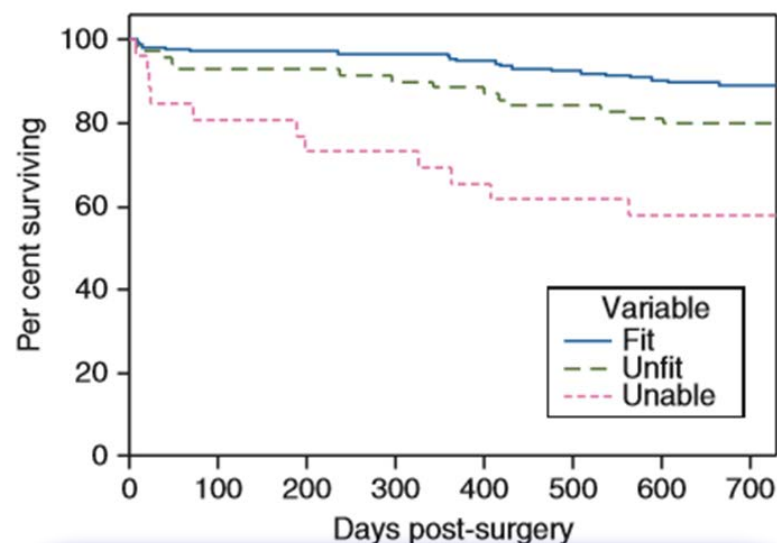


British Journal of Anaesthesia 111 (4): 607–11 (2013)
Advance Access publication 5 June 2013 · doi:10.1093/bja/aet193

BJA

Patients' inability to perform a preoperative cardiopulmonary exercise test or demonstrate an anaerobic threshold is associated with inferior outcomes after major colorectal surgery

C. W. Lai^{1,2}, G. Minto^{2,3}, C. P. Challand^{1,2}, K. B. Hosie¹, J. R. Sneyd^{2,3}, S. Creanor² and R. A. Struthers^{2,3*}

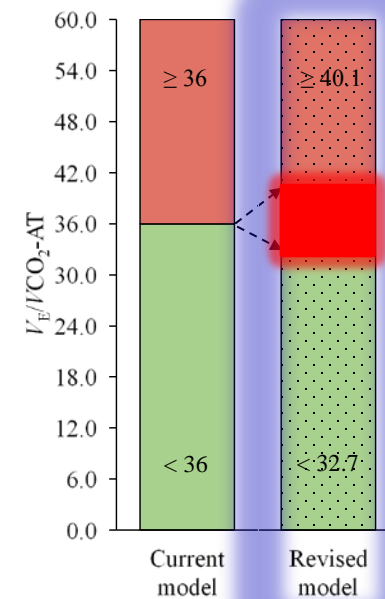
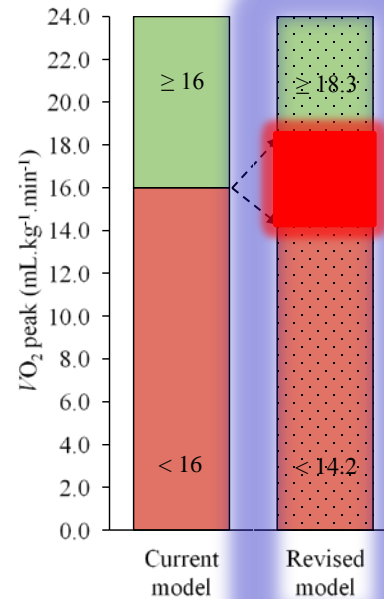
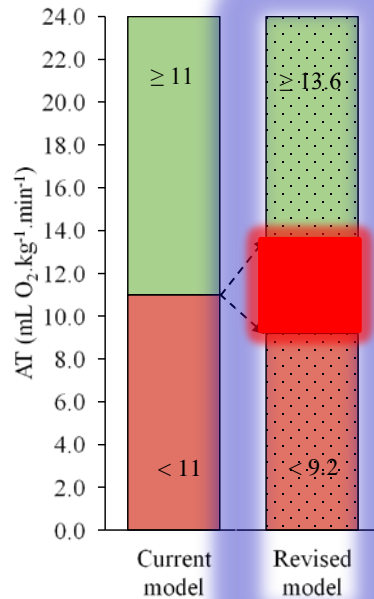
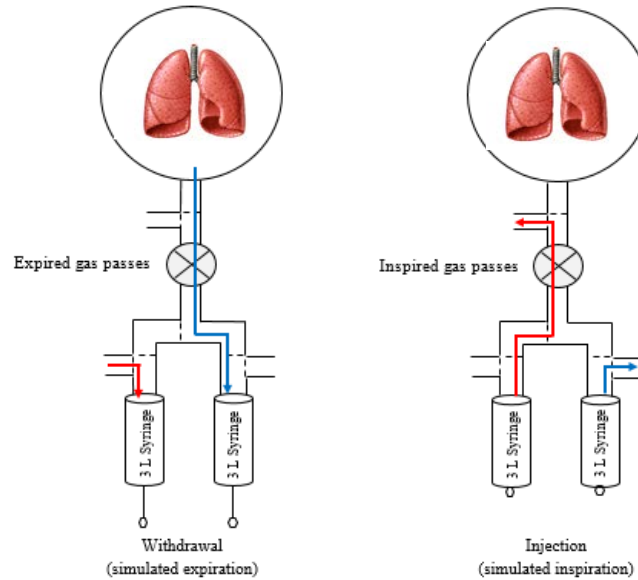
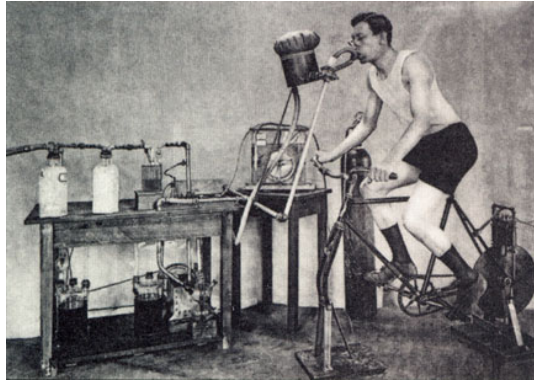


| Days from surgery | Number at risk | | | | |
|-------------------|----------------|-----|-----|-----|-----|
| | 0 | 200 | 400 | 600 | 730 |
| Fit | 174 | 169 | 165 | 157 | 155 |
| Unfit | 69 | 64 | 60 | 56 | 55 |
| Unable | 26 | 19 | 17 | 15 | 15 |

| Risk group | CPET variables | Postop destination |
|--------------|---|---|
| High | AT <8 mls/kg/min or ≥2 of: • VE/ $\dot{V}CO_2$ @AT >34 • AT <11 mls/kg/min • History of IHD | HDU/PACU |
| Intermediate | 1 of: • AT 9-11 mls/kg/min • VE/ $\dot{V}CO_2$ @AT >34 • History of IHD | Ward (Consider PACU if other comorbidities or significant surgery) |
| Low | AT >11 mls/kg/min | Ward |

Identification of “grey-zones”

$$CD = k \sqrt{CV_A^2 + CV_B^2}$$



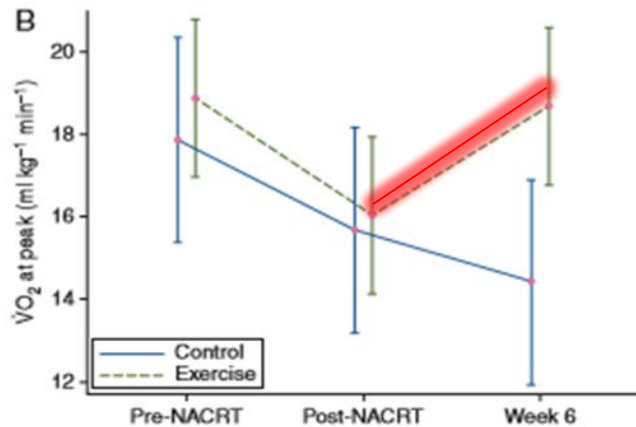
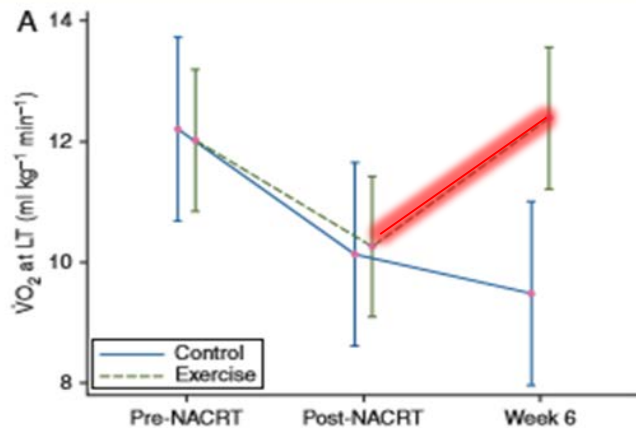
Exercise “Prehabilitation”

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BJA

Effect of prehabilitation on objectively measured physical fitness after neoadjuvant treatment in preoperative rectal cancer patients: a blinded interventional pilot study

M. A. West^{1,2*}, L. Loughney^{1,3}, D. Lythgoe⁴, C. P. Barben¹, R. Sripadam⁵, G. J. Kemp², M. P. W. Grocott^{1,2,3,6,7} and S. Jack^{1,2,3,6,7}



Training variables

Frequency

| Su | M | Tu | W | Th | F | Sa |
|----|---|----|---|----|---|----|
| | X | | X | | X | |
| | X | | X | | X | |

Intensity



Duration

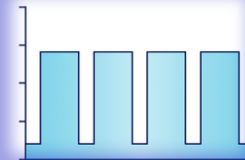


Training format

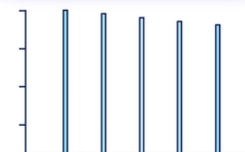
MICT



HIIT

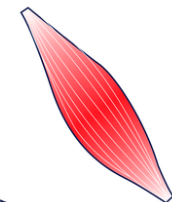


SIT



Physiological adaptations

Skeletal muscle



- Cellular stress
- Molecular responses
- Mitochondrial content
- Capillary density

Cardiovascular and integrative



- Maximum cardiac output
- Maximum stroke volume
- Blood volume
- $\dot{V}O_{2\max}$