

The CSIRO Total Wellbeing Diet

-from lab bench to kitchen bench

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CSIRO Food and Nutritional Sciences



Any approach to weight loss?

Lose weight fast!

Fed up of dieting and exercise?

Incredible results guaranteed!

Try amoebic dysentery!

Vials available: £20. Simply add to seafood.

Call 020 7306 8044 (shouldn't, but *may* cause fatality)

CSIRO Lower Carbohydrate Higher Protein Pattern

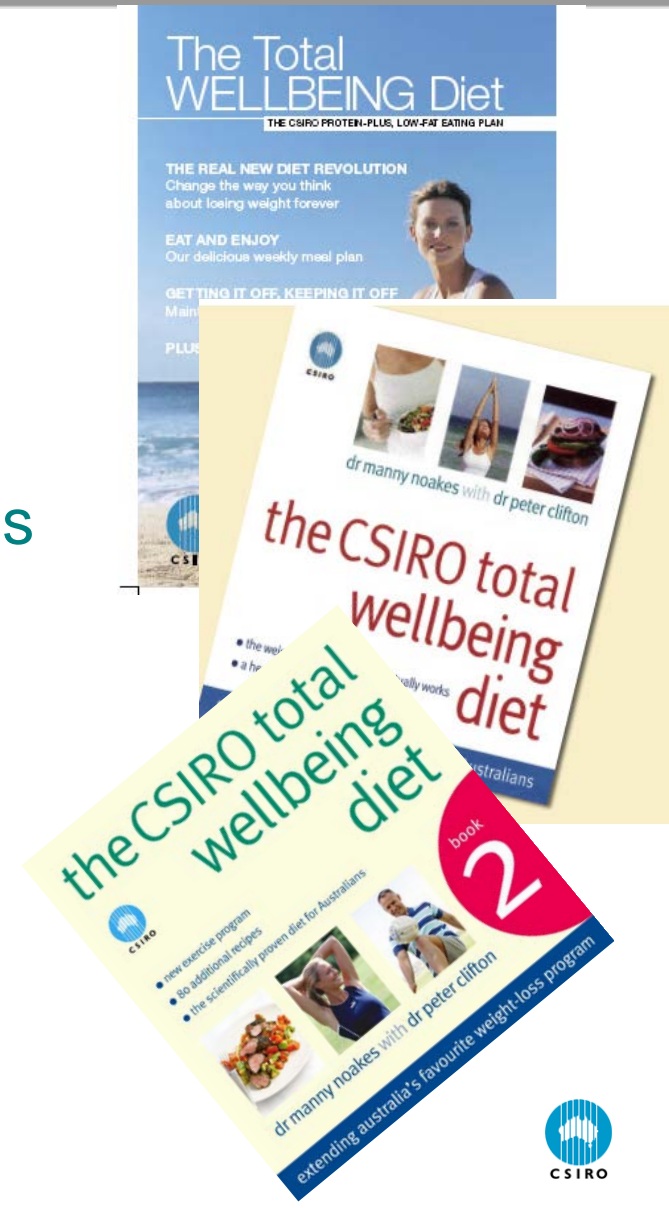
Extensively clinically evaluated

Efficacy

- Fat loss
- Heart health benefits
- Reduces glucose and insulin levels
- Improves vitamin/mineral status

Safety

- Bone
- Renal
- Liver
- Nutritionally balanced

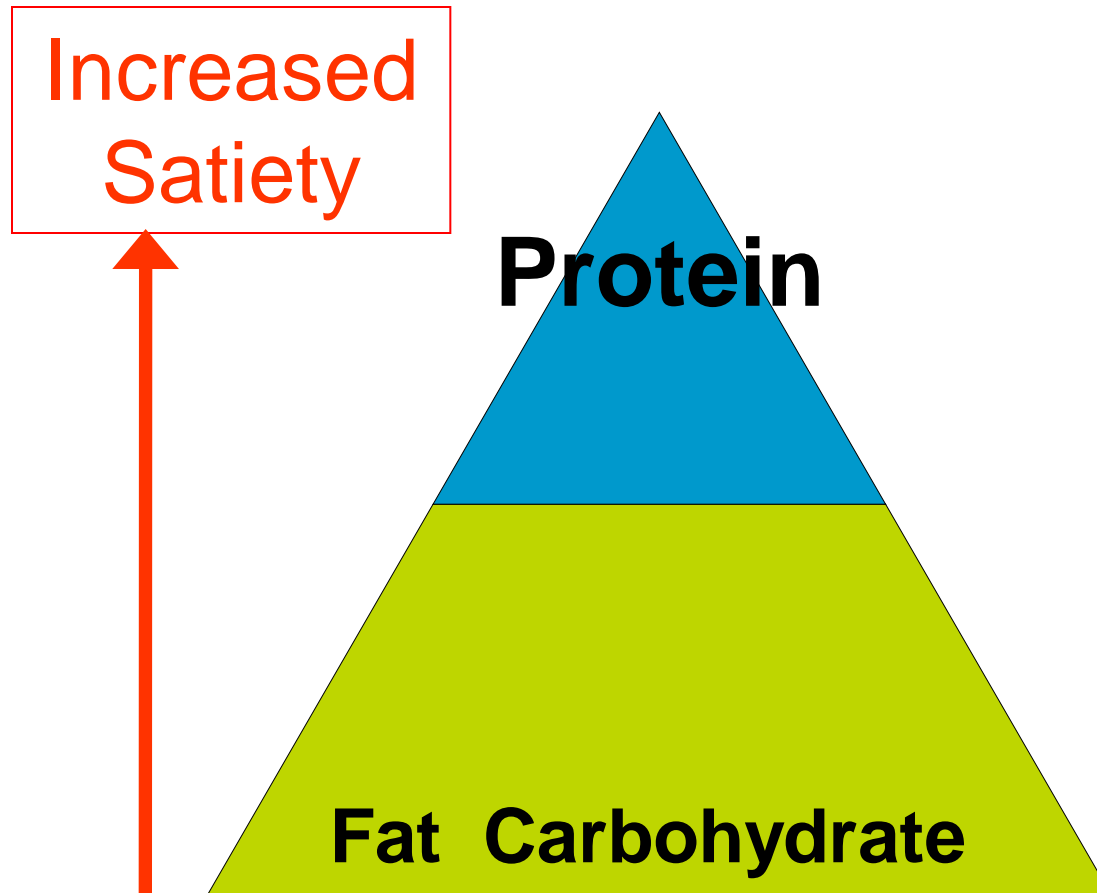


Research origins – Role of Proteins



1999	2000	2001	2002	2003	2005-11
• CSIRO	• Co-funded	• Co-funded	• Sponsored • Co-funded	• Sponsored • Sponsored • Co-funded	• Sponsored • Sponsored • Co-funded • CSIRO X4
<ul style="list-style-type: none">• Dairy Australia• Meat & Livestock Australia• Goodman Fielder• National Heart Foundation• National Centre of Excellence in Functional Foods• National Health and Medical Research Council• Diabetes Australia Research Trust• Australian Egg Corporation LTD• University of Adelaide• Pork CRC					

Protein Enhances Satiety



High Protein Diets in Energy Restriction

❖ enhances weight loss

(Skov et al. 1999; Baba et al. 1999, layman 2003)

❖ promotes favourable changes in body composition

(Skov et al. 1999; Laymen et al. 2003; Parker et al. 2002, Noakes 2005)

❖ beneficial effects on heart disease risk factors

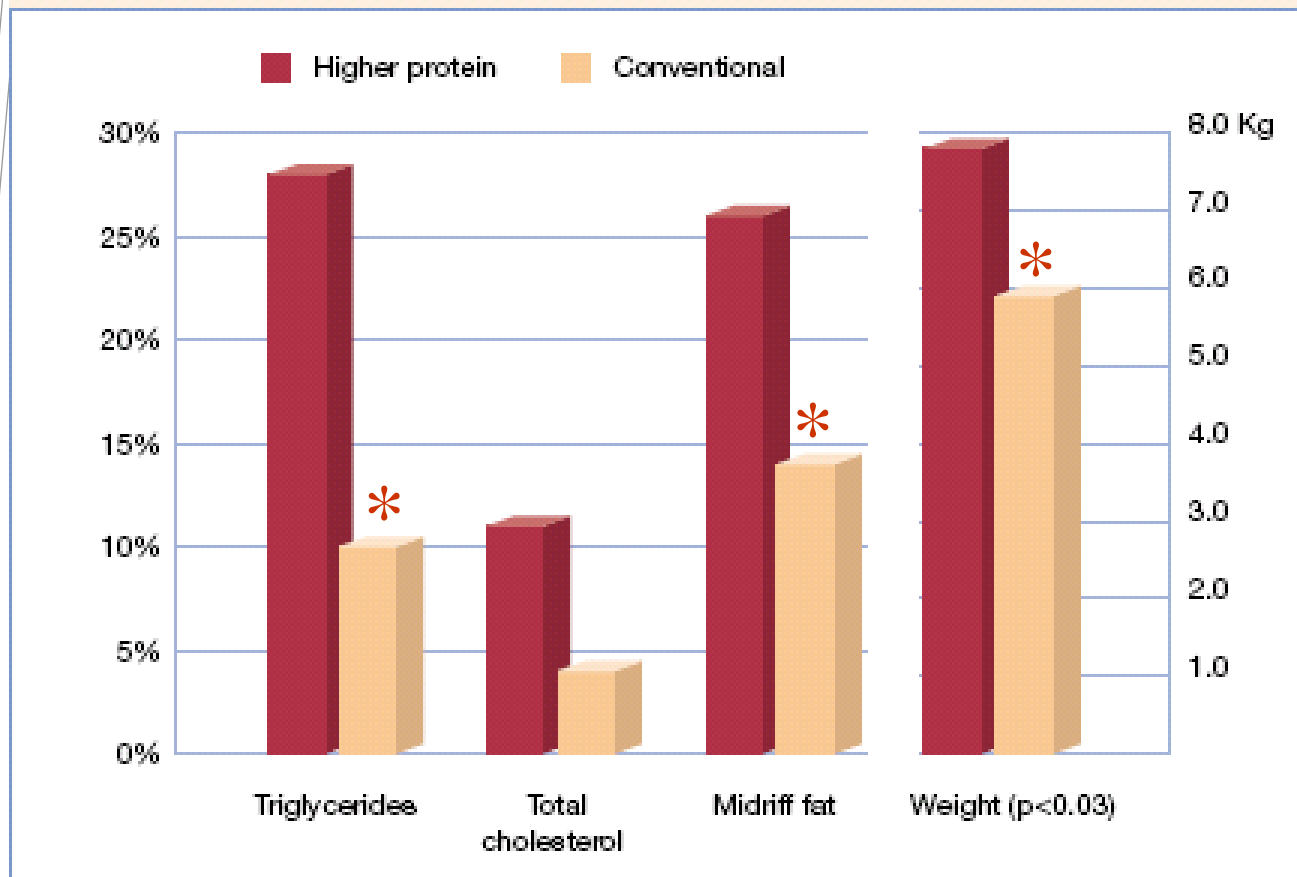
insulin sensitivity (Baba et al. 1999; Layman 2003; Piatti et al. 1994)

glucose/insulin profiles (Farnsworth et al. 2003, Gannon et al 2003)

triglyceride reduction (Layman, 2003; Farnsworth 2003, Gannon 2003)

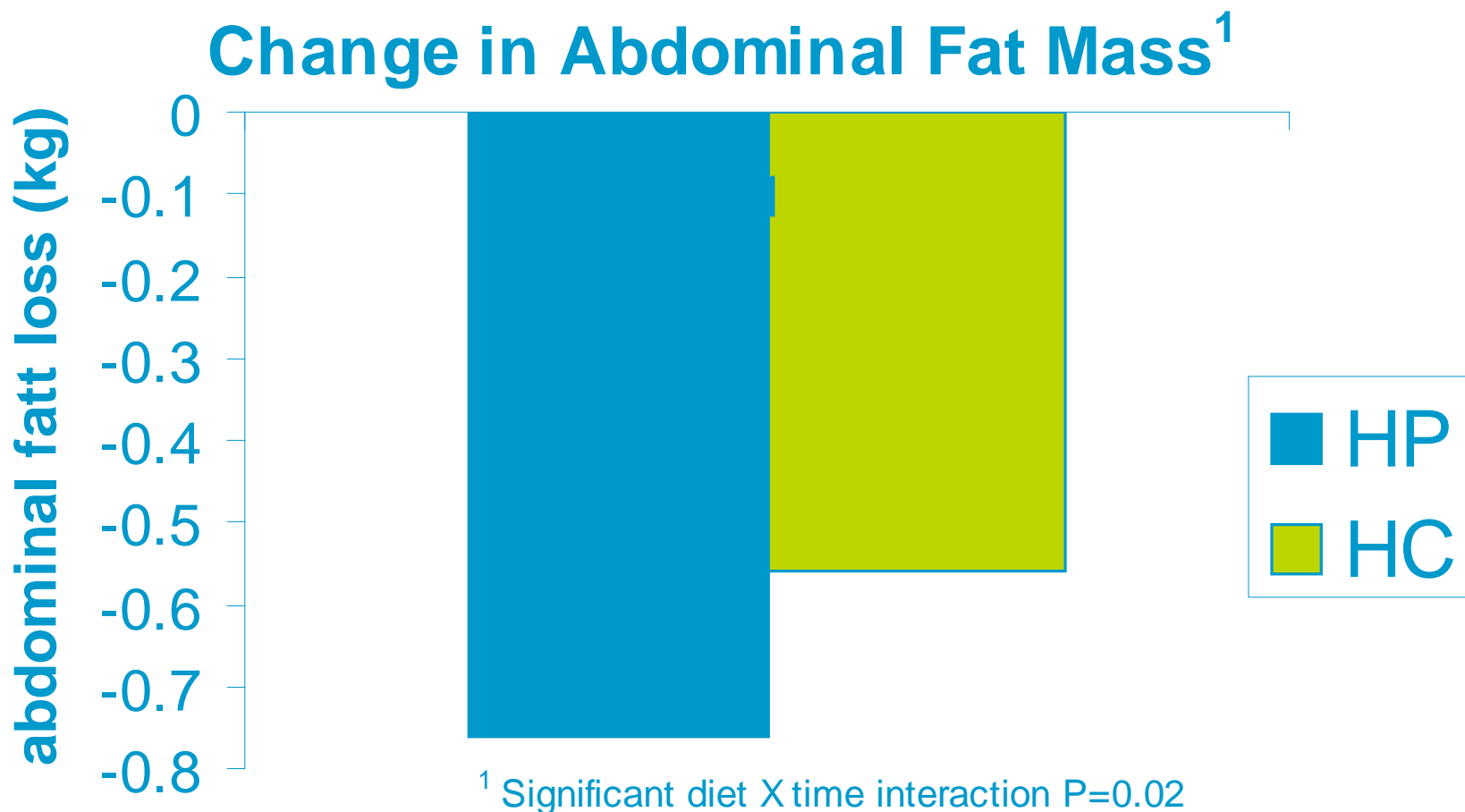
High Protein Moderate Carb Diets

Noakes, Keogh, Foster, Clifton et al AJCN 2005



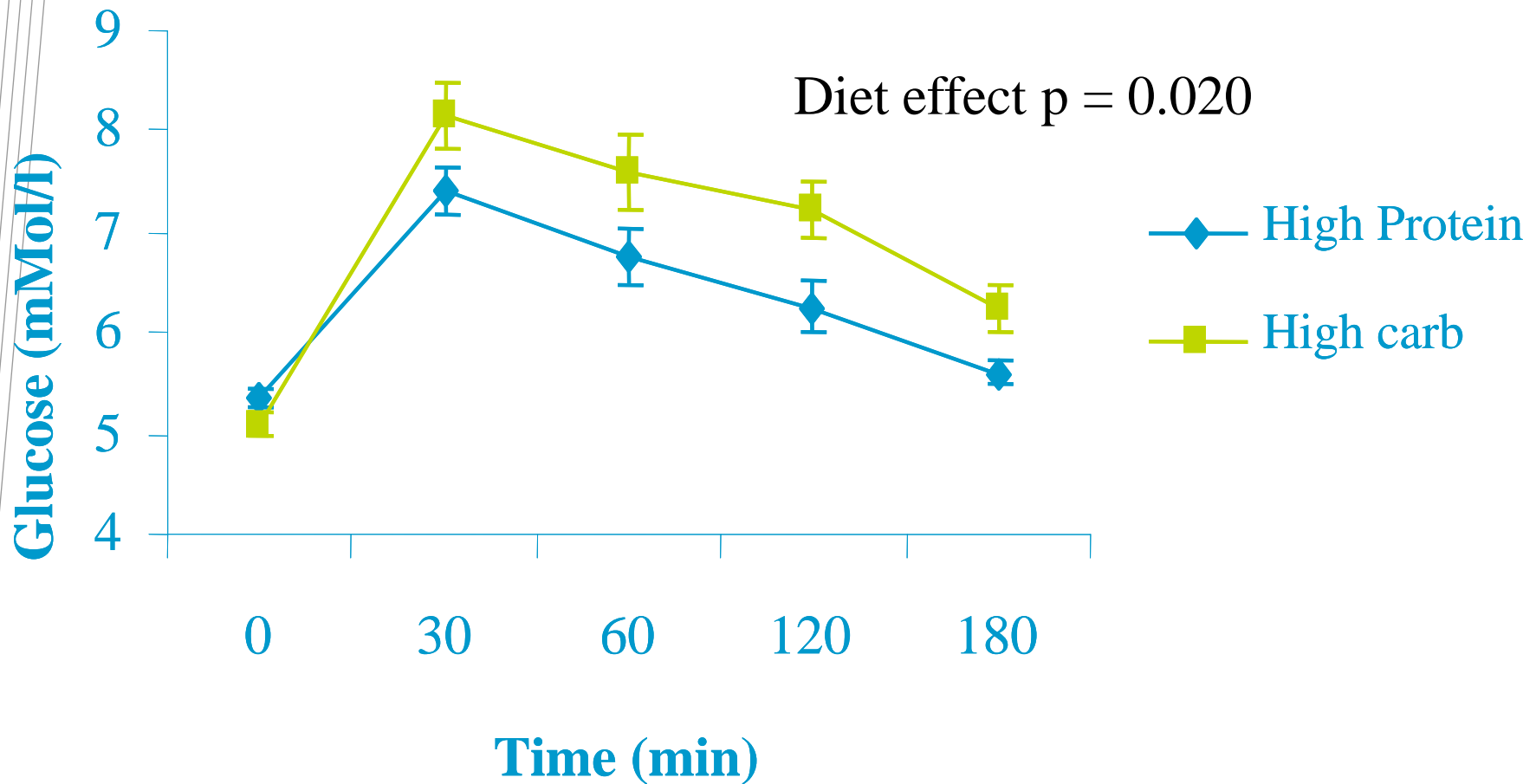
High protein moderate carb patterns for weight loss improve fat loss and triglyceride reduction in people with high triglycerides

Abdominal Fat Mass



HP -0.76±0.38 kg vs HC, -0.56±0.36 kg

Glucose Response to Test Meals

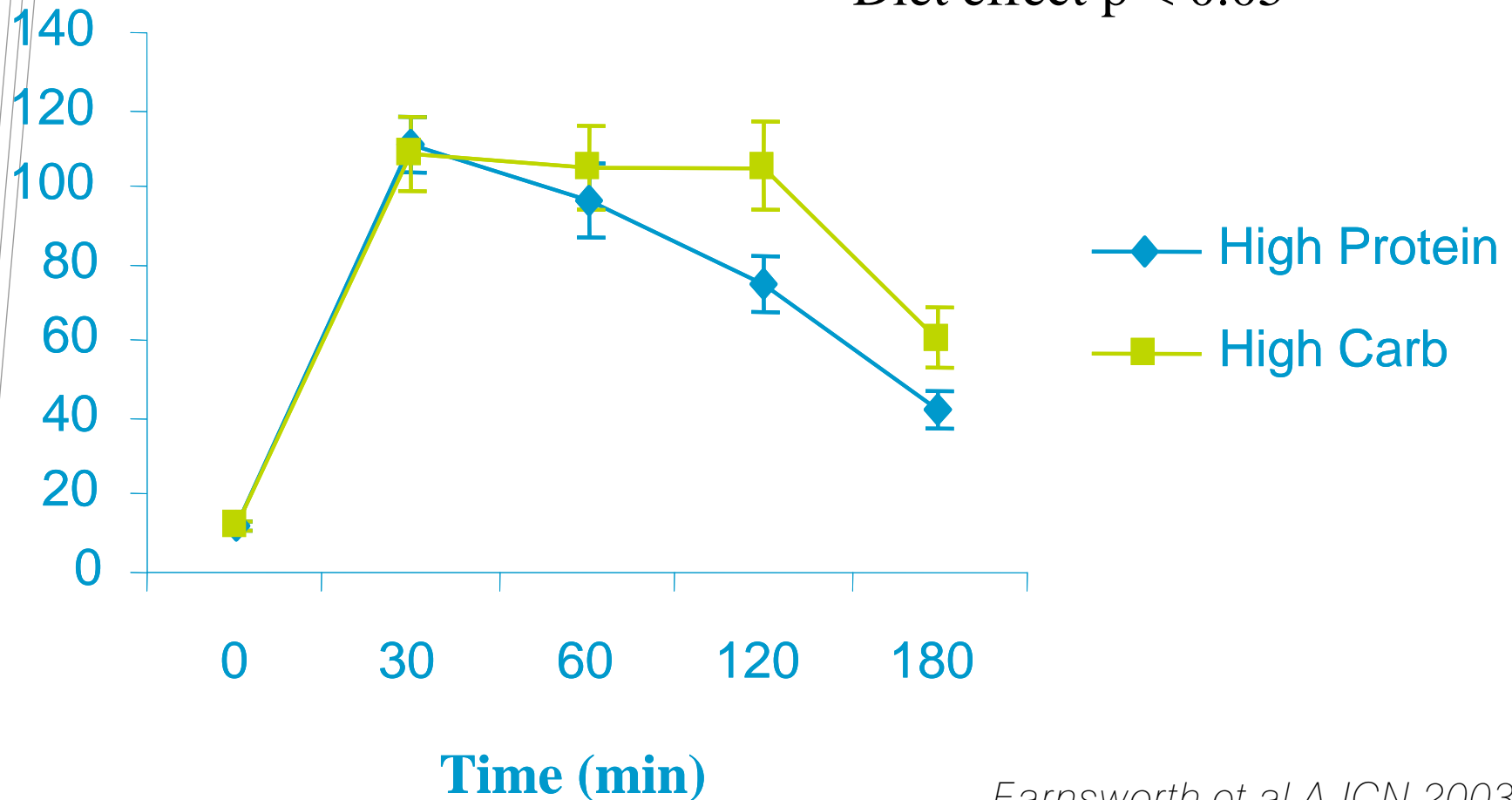


Farnsworth et al AJCN 2003

Insulin Response to Test Meals

Insulin (mU/l)

Diet effect $p < 0.05$



Farnsworth et al AJCN 2003

High Protein Diet using Partial Meal Replacements in Type 2 Diabetes

Results at 12 weeks

9% weight loss

- “ waist circumference (9%)
- “ blood pressure (7.8/3.9 mmHg)
- “ fasting glucose (21%)
- “ HbA1c (16%)
- “ insulin resistance (48%)
- “ triglyceride (34%)
- “ total cholesterol (10%)
- “ LDL-cholesterol (8%)
- “ oxidative stress - MDA (26%)

NO change in endothelial function (FMD)

5.5MJ

104g

25g

114g

28g

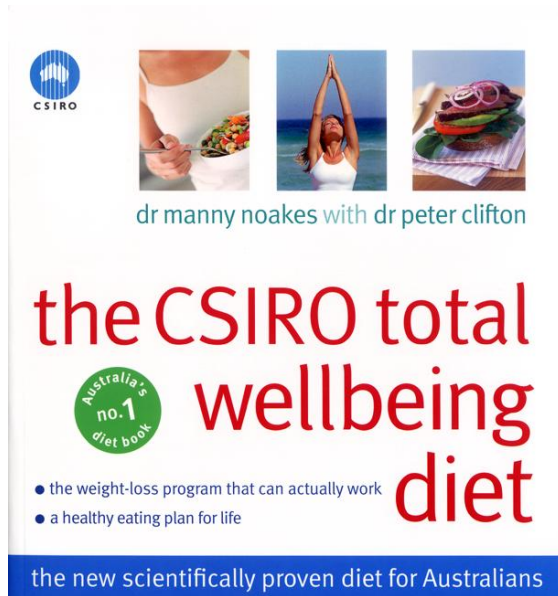
Protein

Fat

Carbohydrate

Fibre

Traditional cardiovascular risk factors



Key features

- ✓ higher protein
- ✓ daily self monitoring
- ✓ structured eating plan
- ✓ extensive suggestions
- ✓ for menus and recipes
- ✓ encourages exercise

TWD is NOT the only approach to weight management but represents a scientifically supported option

Impact of CSIRO Diet

Public Health Nutrition: page 1 of 6

doi:10.1017/S136898001000073X

The CSIRO Total Wellbeing Diet Book 1: sociodemographic differences and impact on weight loss and well-being in Australia

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Abstract

Objective: The CSIRO Total Wellbeing Diet (TWD) publication is an evidence-based weight management strategy utilising a structured higher protein diet as part of a nutritionally balanced lifestyle programme. Despite its popularity, the impact of TWD on weight status, weight loss and food choices of Australians was unknown.

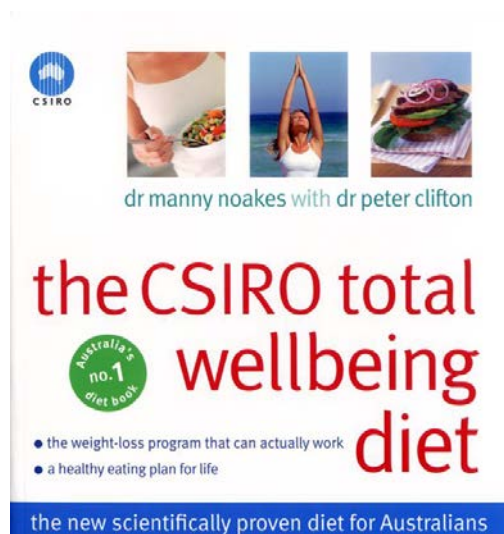
Design: An independent representative survey was conducted in 2006. Sociodemographic differences in awareness, use of TWD and the impact on weight status and well-being were investigated via computer-aided telephone interviews and web-based surveys.

Setting: Australia.

Subjects: A total of 5026 men and women aged 18–60 years.

Results: Consumers were highly aware of TWD (66%) with personal use reported by 7.5% of the total sample (n 5026). An additional 2.5% (126 people) were members of a household that used TWD. In all, 80% of TWD purchasers actively used the eating plan with approximately 3.8% losing an average self-reported weight loss of 5.7 kg ($SD = 1.72$ kg; range = 1–13 kg). Results showed that awareness was greatest among women (73.79% *v.* 58.27%), those over 50 years of age (69.39% *v.* 62.88%) with no children in the household (69.00% *v.* 64.88%), tertiary educated people (72.58% *v.* 63.22%) and those with more previous weight loss attempts (79.66% *v.* 70.24%). Logistic regression was unable to predict an identifiable sociodemographic profile of TWD users.

Conclusions: The present study shows widespread uptake of TWD in Australia with few sociodemographic differences. Self-reported increased awareness of nutrition and well-being as well as weight loss indicates that TWD has been a successful delivery mechanism for lifestyle advice.



Keywords
CSIRO Total Wellbeing Diet
Awareness
Impact
Weight loss
Sociodemographics
Survey



Key Foods on CSIRO Diet

PROTEIN FOODS

DAIRY FOODS,

- 3 serves per day

MEAT/CHICKEN/FISH

- 200g dinner

CHICKEN/FISH/EGGS

- up to 100g/day at lunch



dr marny noakes

dr peter clifton

the CSIRO total
wellbeing
diet

- the weight loss program that can actually work
- a healthy eating plan for life

the new scientifically proven diet for Australians

WHOLEGRAIN BREAD

2 slices per day

HIGH-FIBRE CEREAL

1 serve per day

FRESH FRUIT

2 serves per day

VEGETABLES

at least 2.5 cups per day

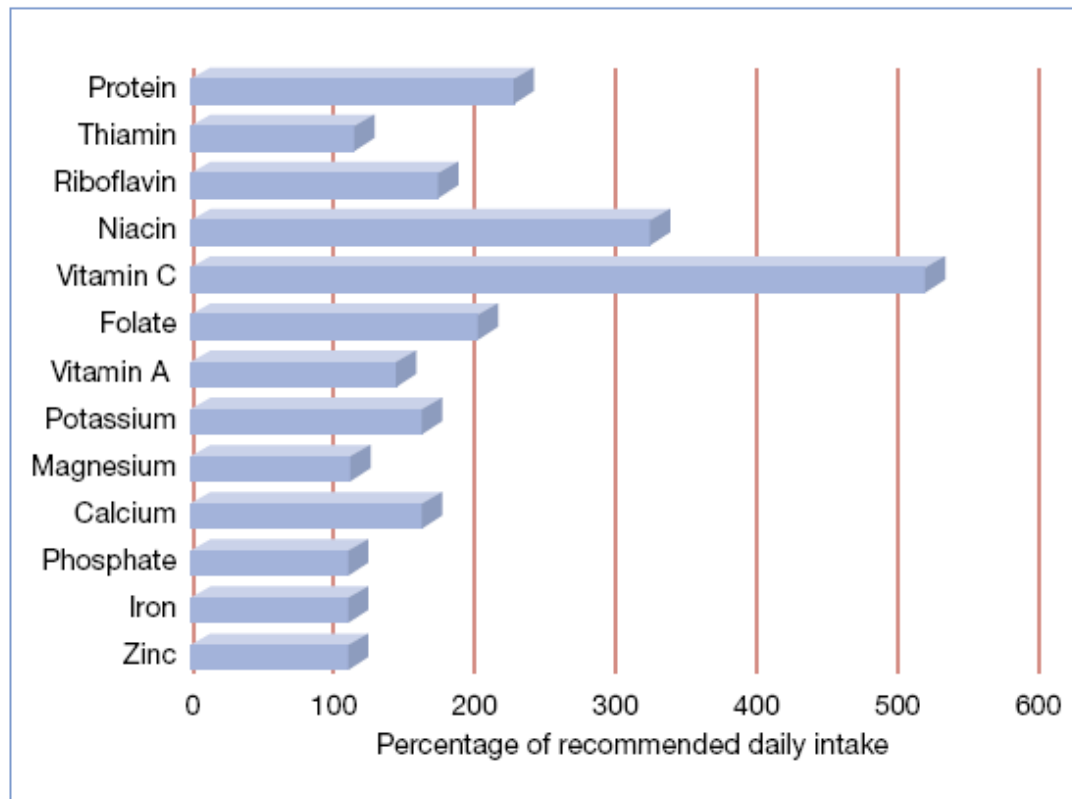
OIL/MARG

3 teaspoons per day

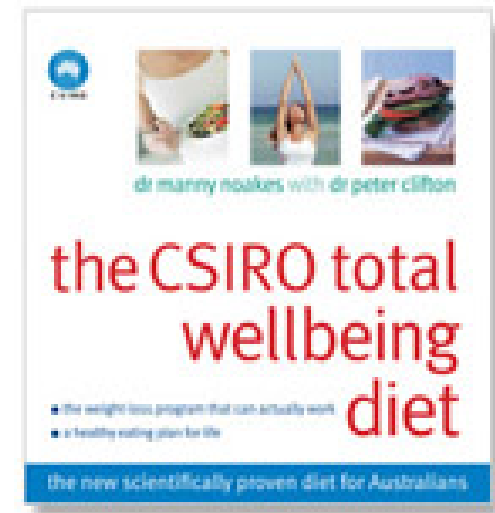
INDULGENCE FOODS eg alcohol

2-4 times per week

Maximum Nutrition during Weight Loss



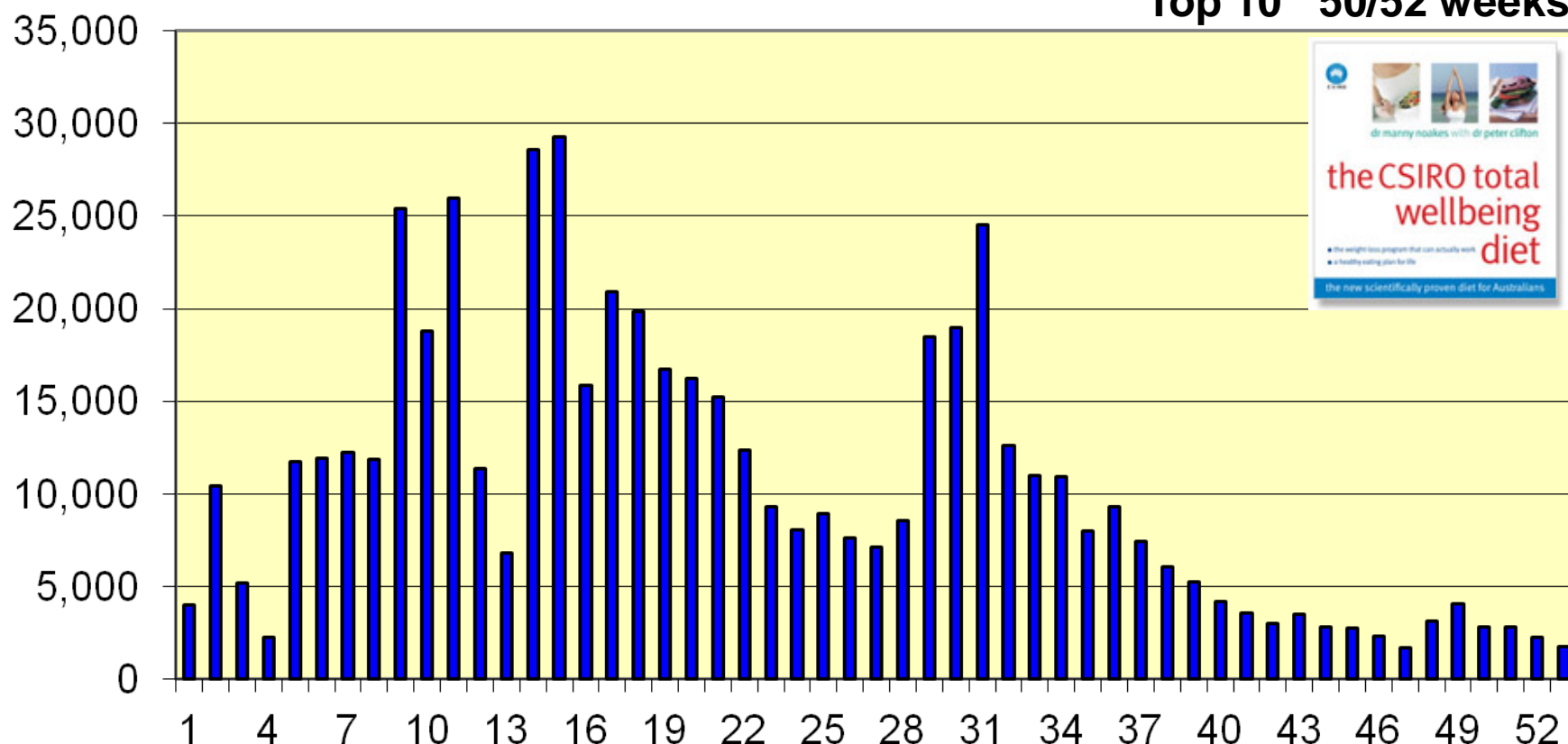
Nutrient density of a typical higher protein weight reducing diet (based on CSIRO study ¹²⁾)



Volume of Books Sold Weekly

No 1 19/52 weeks

Top 10 50/52 weeks

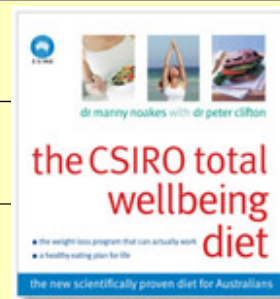


**May
2005**

weeks

**May
2006**

**Total sold in Australia
>1,000,000**



TWD Consumer Study

- Objectives of the study:
 - To see how TWD has contributed to CSIRO's aim to aid in a positive change to Australian eating culture and consumer nutrition. Specifically to answer questions such as:
 - Are people aware of the TWD? How did they find out about it?
 - Do they use the book? In what ways?
 - Has the book changed their behaviour in any way and how?

Methodology

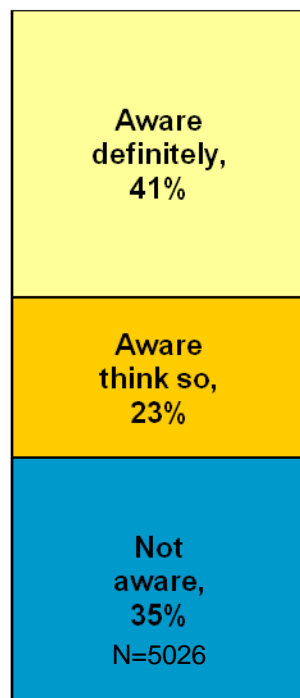
- Representative population survey outsourced to external agency (Inside Story) conducted September 2006 (*pre book 2 launch*)
- telephone
- online

Data weighted to population in line with ABS statistics.

Data from the online sample is similar to that of the telephone survey.

	Telephone 10 minutes	Online 15 minutes	TOTAL
Metro	702	2824	3526
Regional	298	1202	1500
TOTAL	1000	4026	5026

Awareness



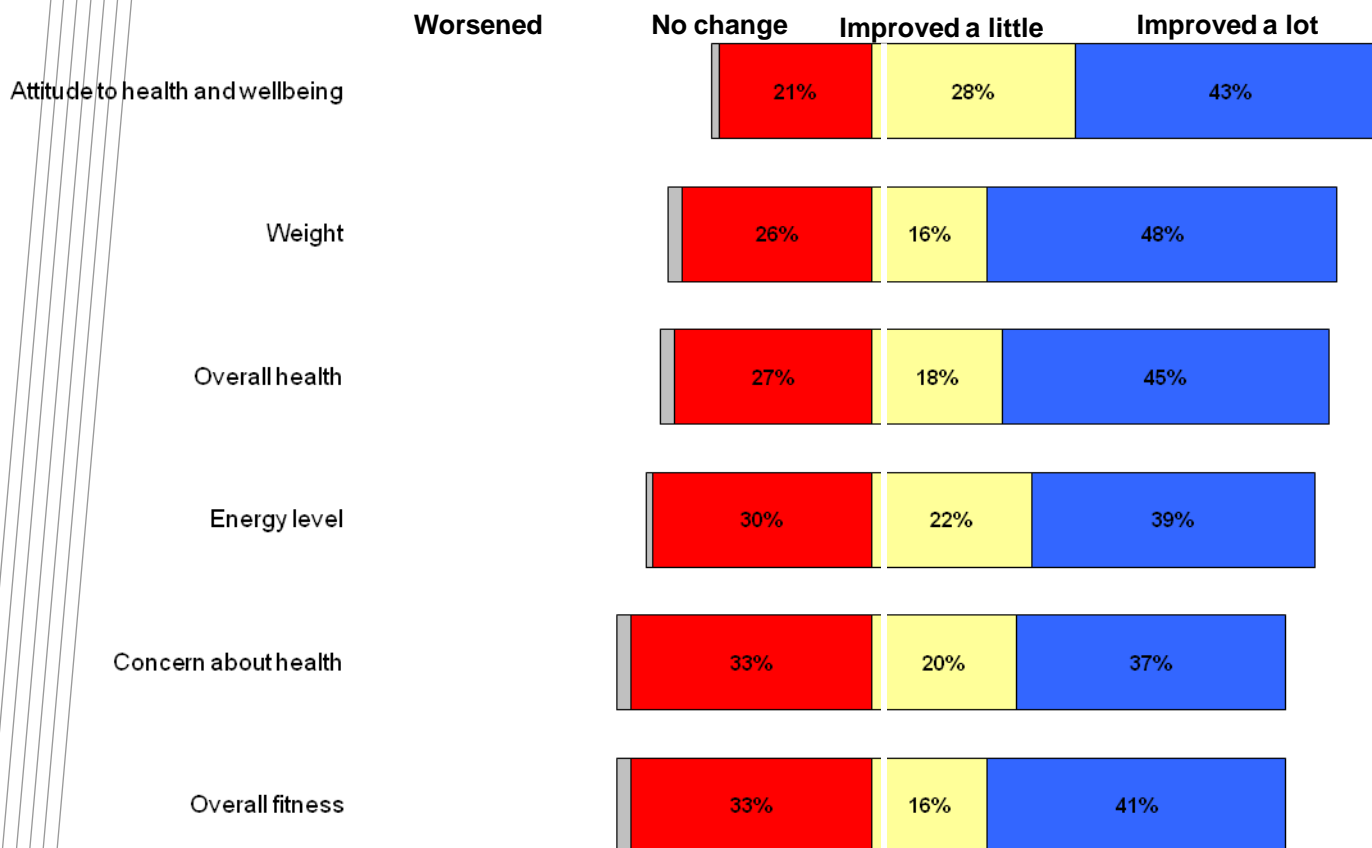
Total aware:
65%

Awareness is high – messages about TWD have reached two thirds of the population ...including those not concerned with their weight

Overall those aware are likely to be female, 60+ or interested in losing weight. However, even those that are not concerned with losing weight have high awareness. All demographics have awareness over 50%

		Gender		Age				Current attitude towards weight loss			
	Total	Male	Female	18-24	25-39	40-59	60+	Lose	Maintain	Don't care	Want to
Aware	65%	57%	72%	53%	65%	67%	71%	76%	75%	68%	71%

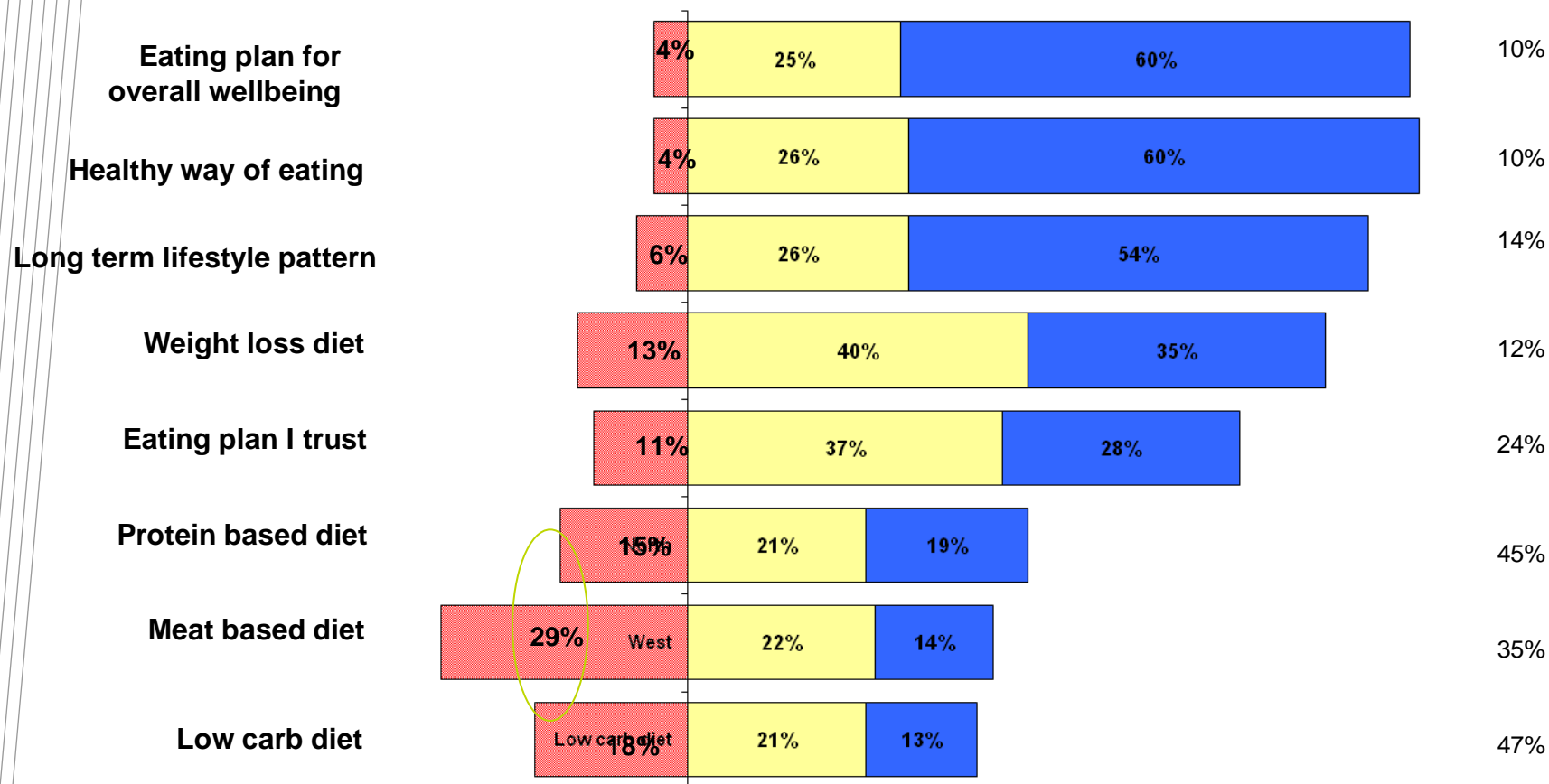
What effects has TWD had on quality of life?



n = 504

Q18. Since using TWD, what have been the effects or changes you've noticed on the following factors in your life?

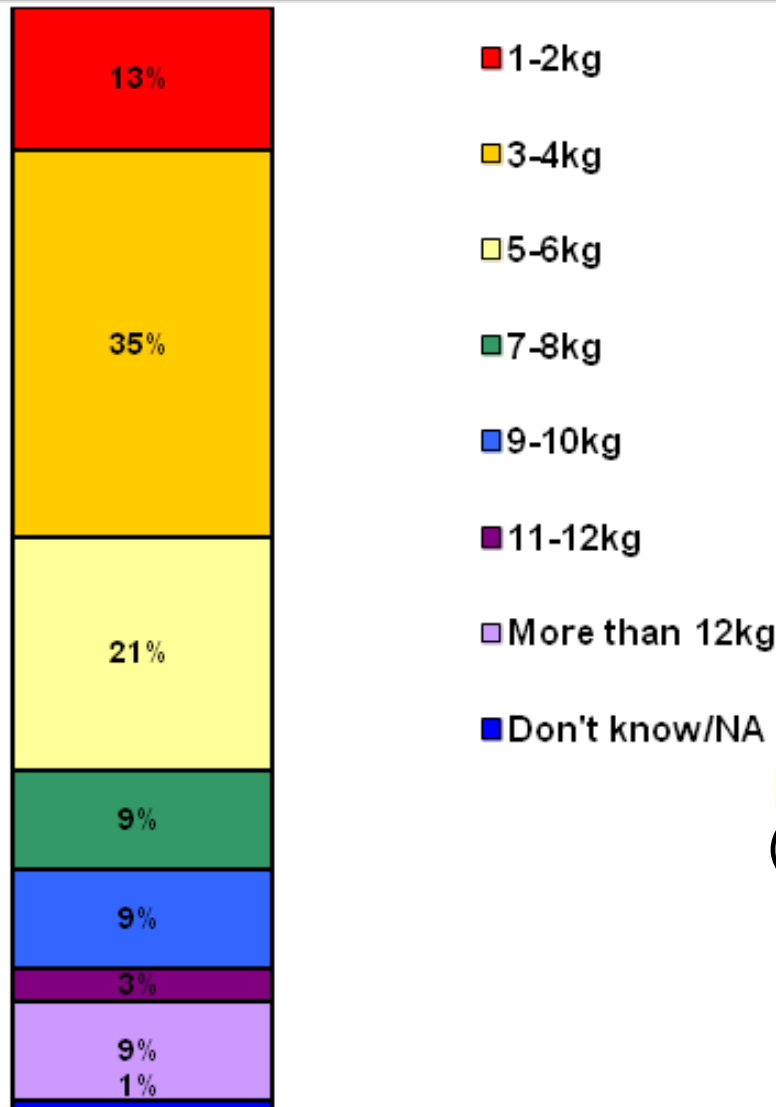
Can you please tell me your impressions of CSIRO TWD?



n = 3326 – all aware

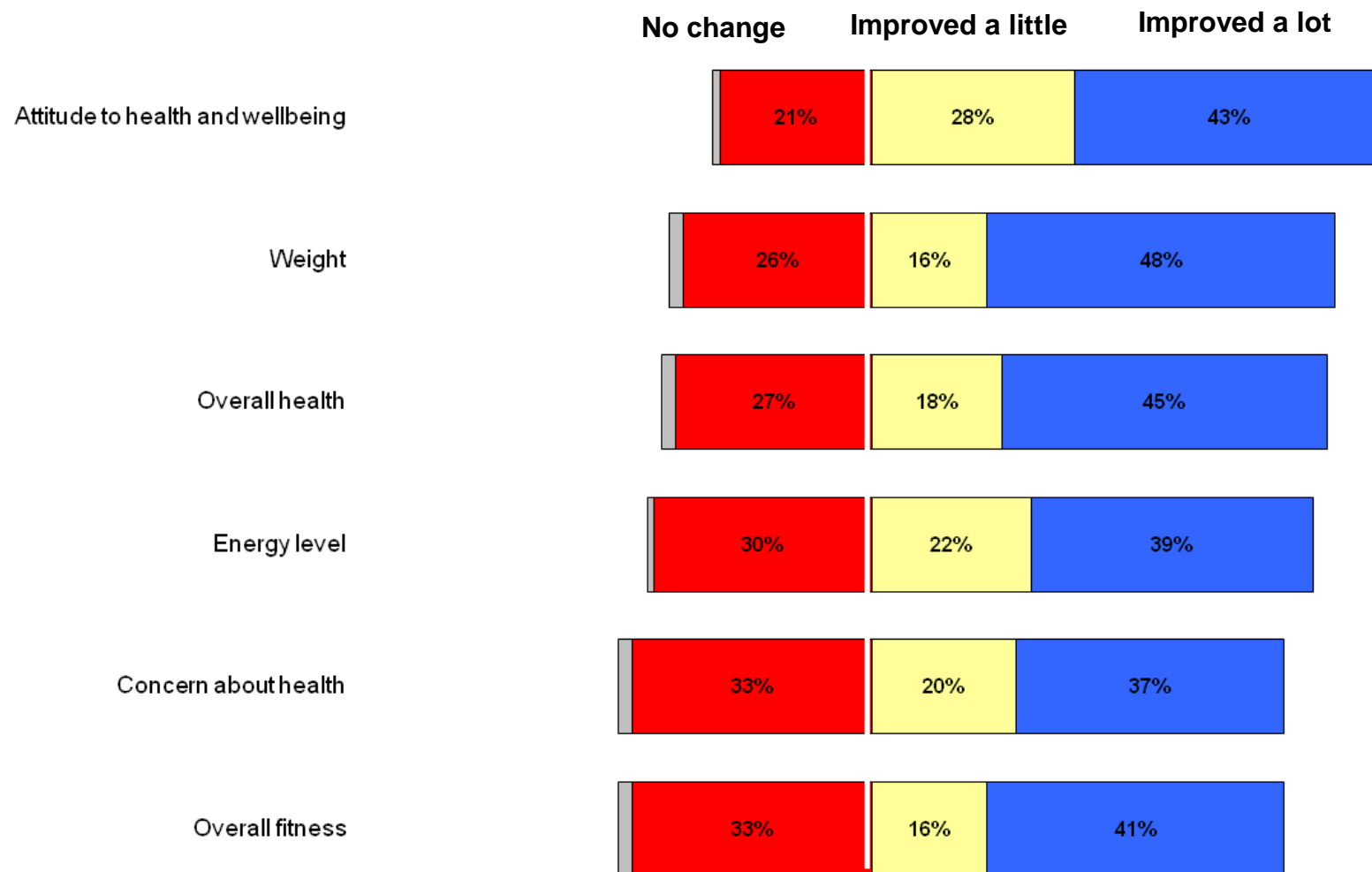
How much weight loss?

Q16b. Approximately how much weight have you lost since using TWD?



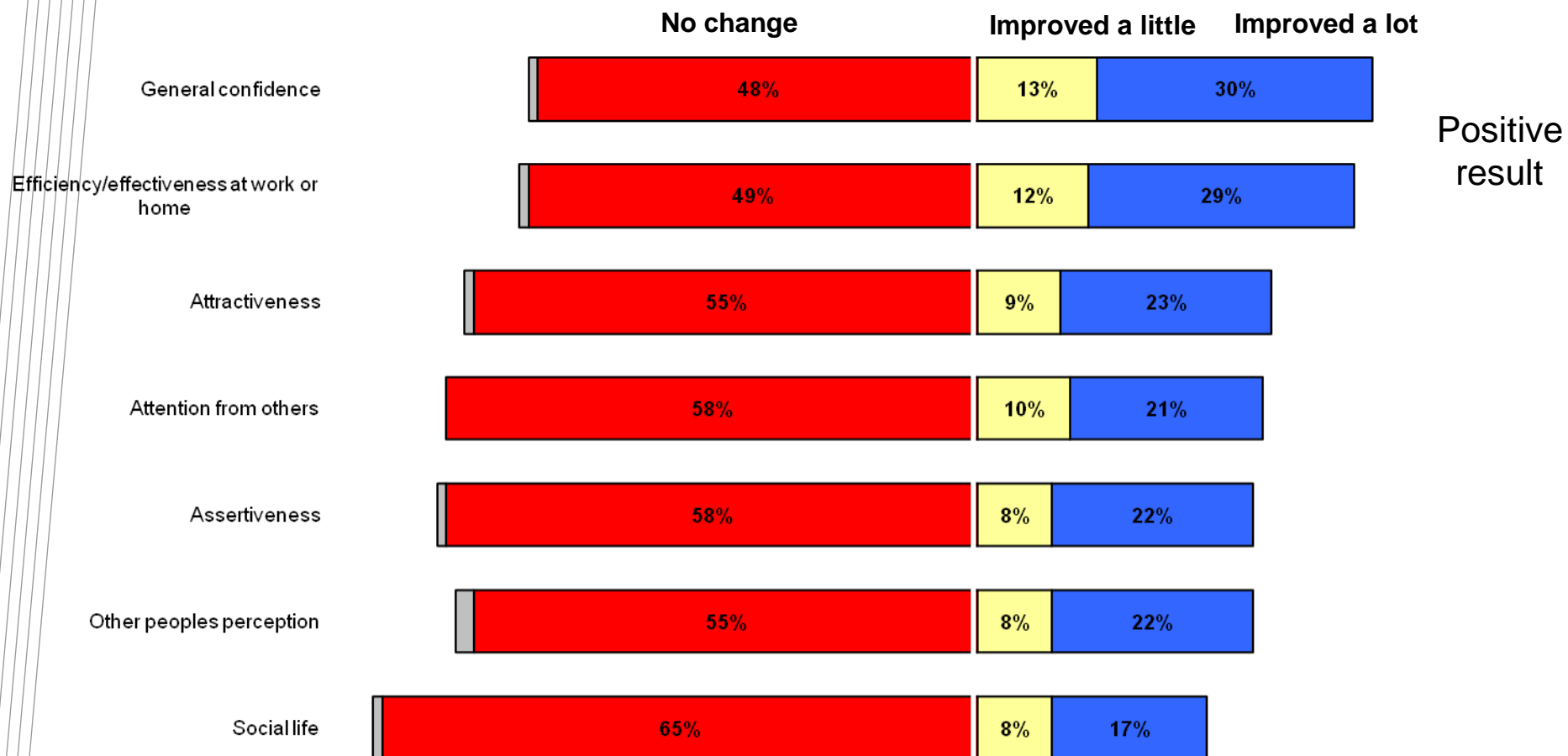
Average amount
of weight lost 6.1kg
(conservative estimate)

What effects has TWD had?



n = 504

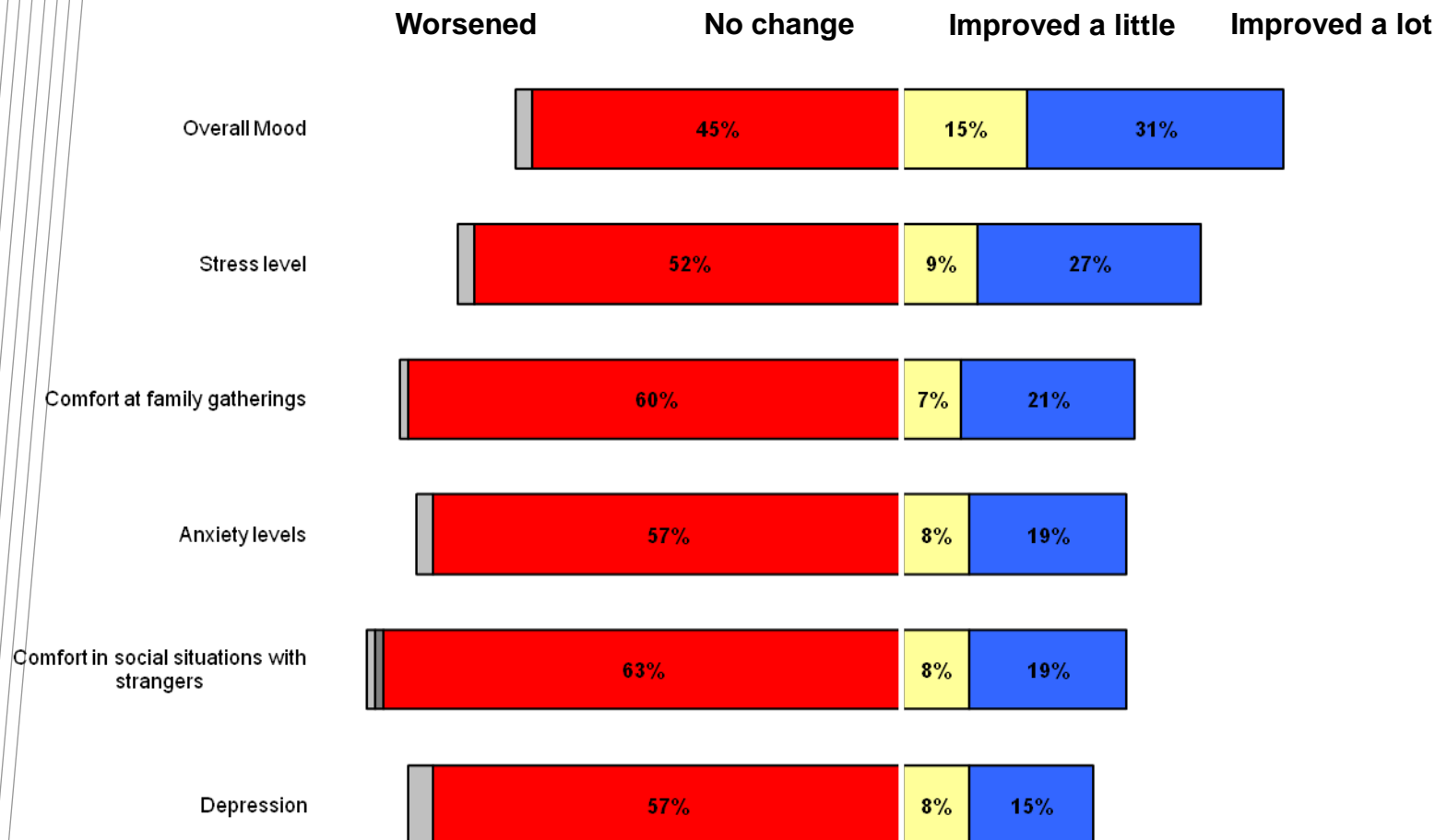
What effects has TWD had?



n = 504

Q18. Since using TWD, what have been the effects of changes you've noticed on the following factors in your life?

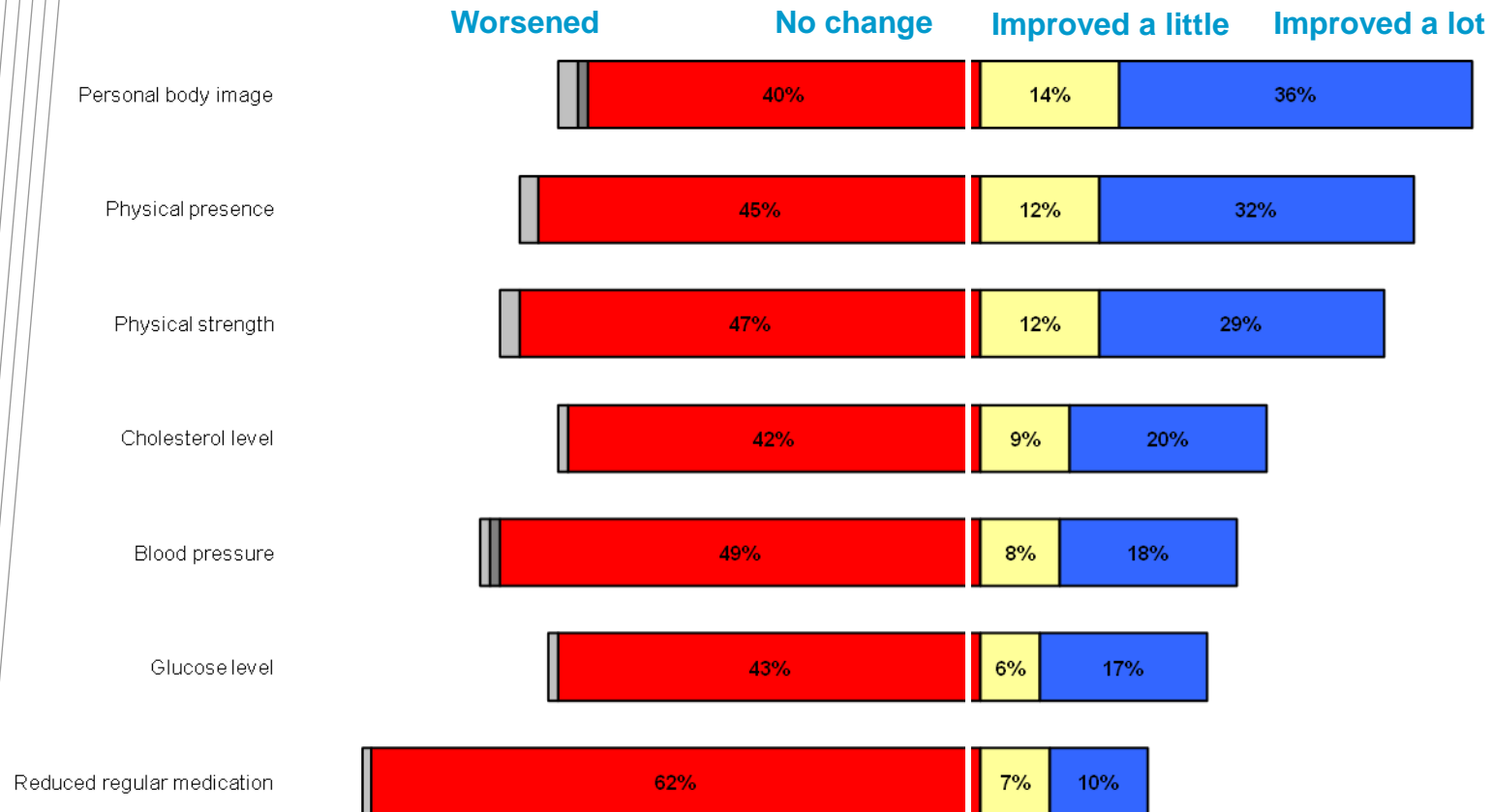
Psychological affects



n = 504

Q18. Since using TWD, what have been the effects of changes you've noticed on the following factors in your life?

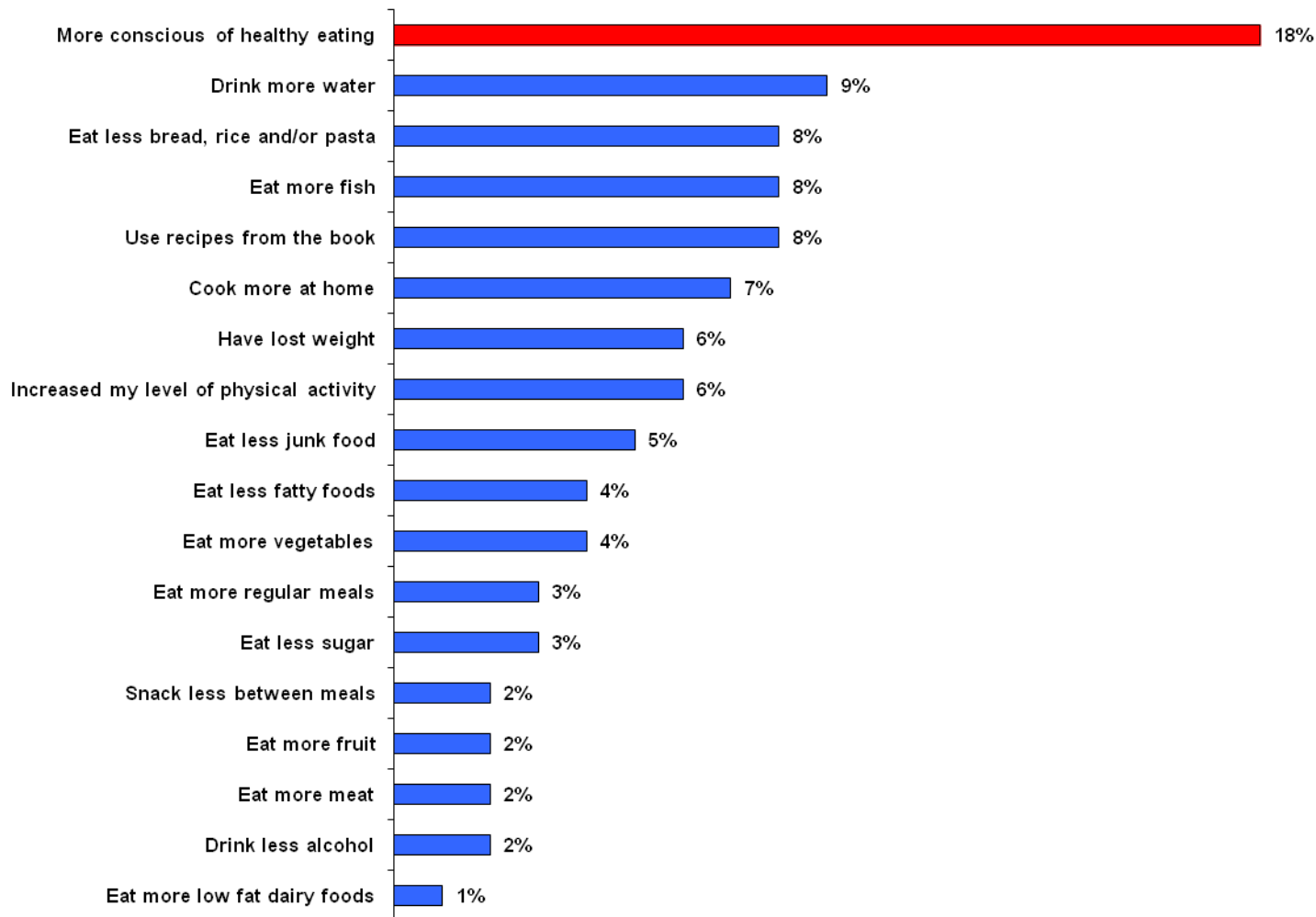
Physical effects



n = 504

Q18 Since using TWD, what have been the effects of changes you've noticed on the following factors in your life?

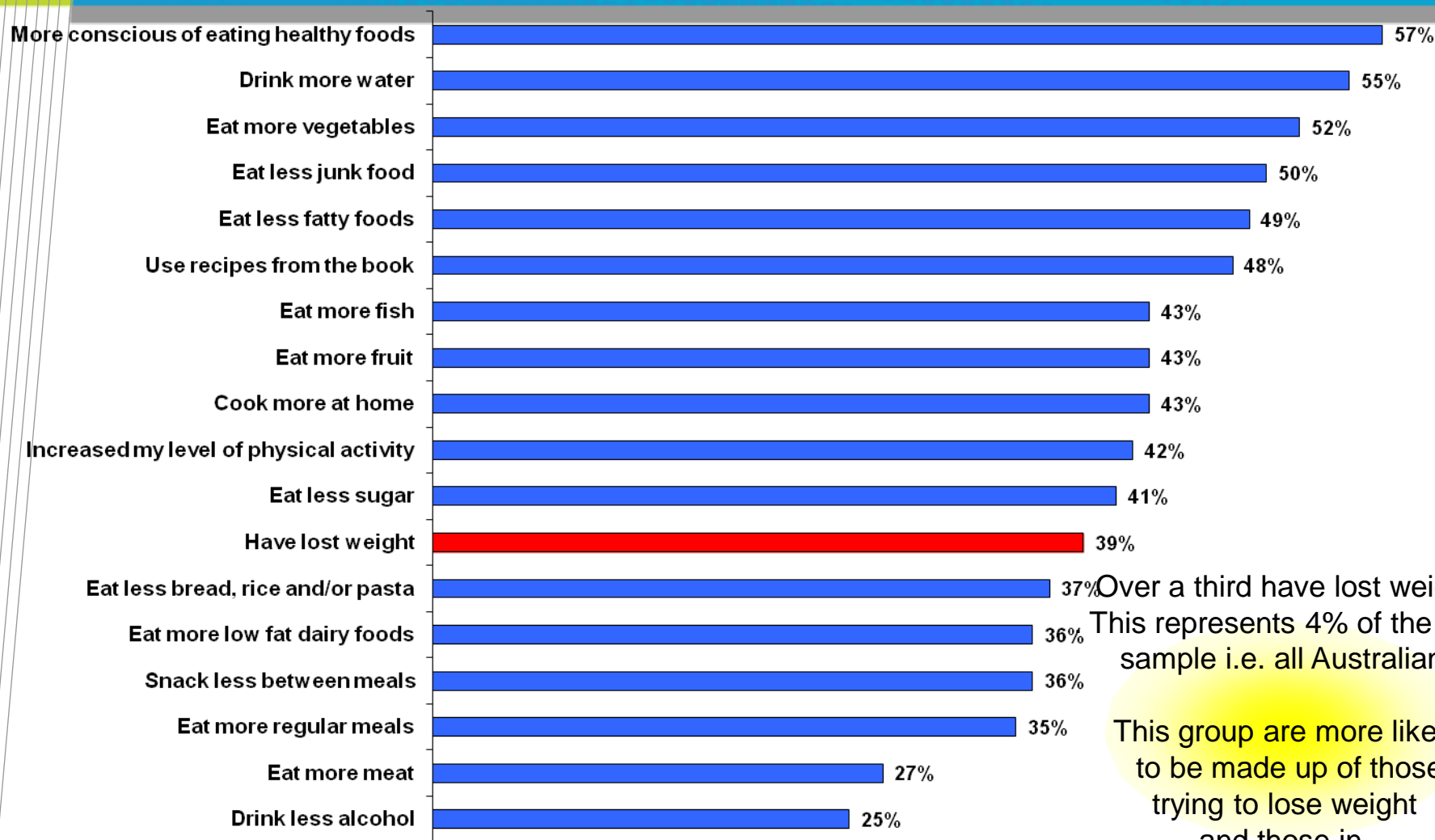
The biggest change to people's lives



n = 349

Q17. And what is the biggest change you have made as a result of TWD?

Other changes to people's lives



Over a third have lost weight
This represents 4% of the total
sample i.e. all Australians

This group are more likely
to be made up of those
trying to lose weight
and those in
regional areas

n = 504 - users

Q16a. Which of the following
changes have you made as a
result of TWD?

Projected impacts of TWD



CSIRO Total Wellbeing Diet- has sold over 1 million copies

Over 500,000 people projected to have lost 6 kg average

Estimated health cost savings \$43m per annum assuming weight loss maintenance.

1 in 6 adult Australians have impaired glucose regulation

A 4kg weight loss can prevent the development of type 2 diabetes in 60% of susceptible people after 4 years

Estimated that TWD could have delayed or prevented type 2 diabetes conservatively in 25,000 people

Next Steps....

