



Structured Education for Type 2 diabetes: expensive and unproven?

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What causes type 2 diabetes?

- ◆ Increased calorie intake
- ◆ Decreased physical activity



Diabetes Prevention Program

- ◆ Subjects with impaired glucose tolerance
- ◆ 16 lessons (1 to 1 with case manager) during first six months

Goals:

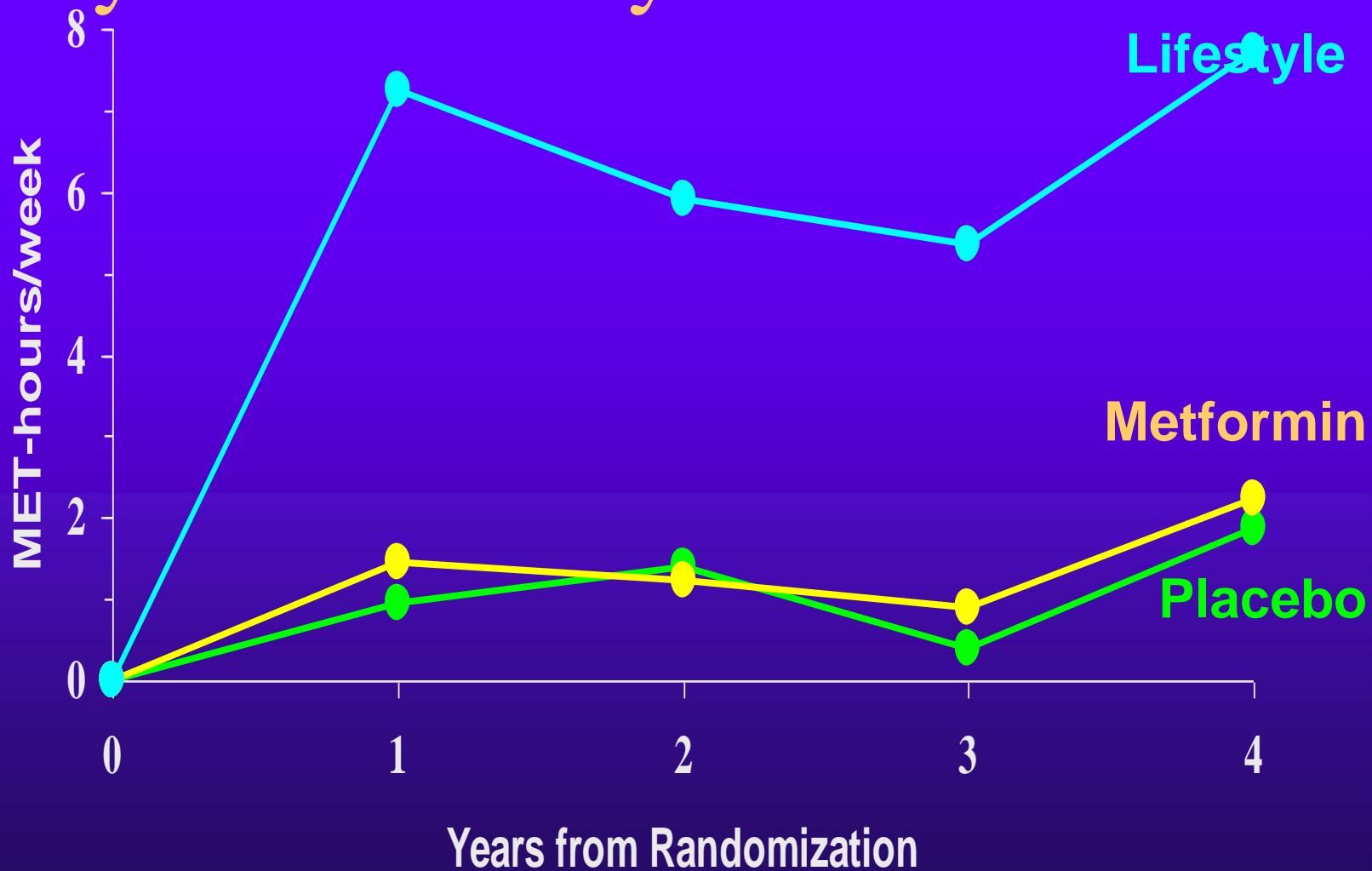
- 7% weight reduction
 - Low calorie low fat diet
 - moderate exercise 150 mins per week
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- ◆ Monthly individual and group sessions to reinforce *behaviour changes*



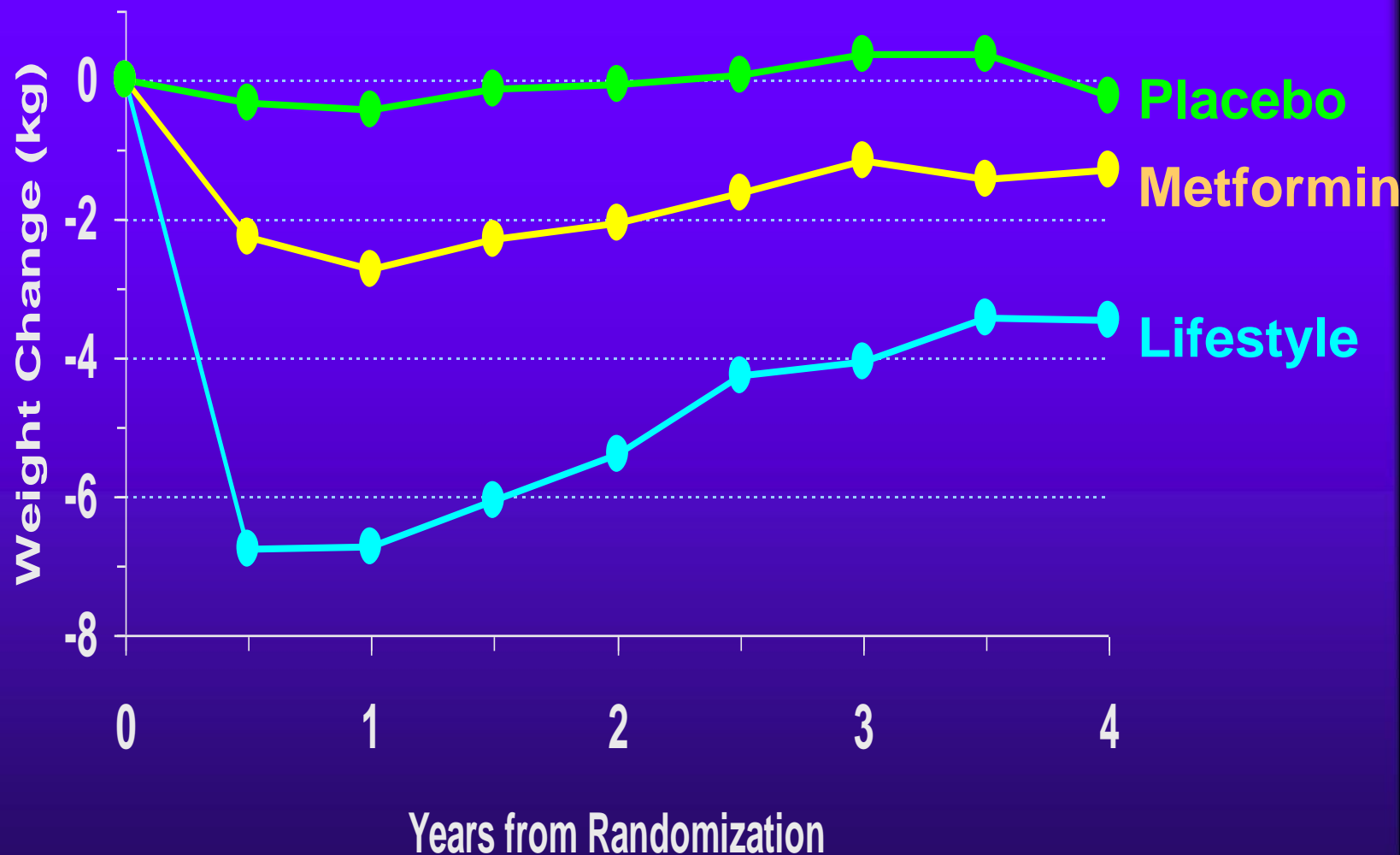
DPP Curriculum

- ◆ Education and training in diet and exercise methods and behaviour modification skills
- ◆ Emphasis on:
 - Self monitoring techniques
 - Problem solving
 - Individualising programmes
 - Self esteem, empowerment, and social support
 - Frequent contact with case manager and DPP support staff

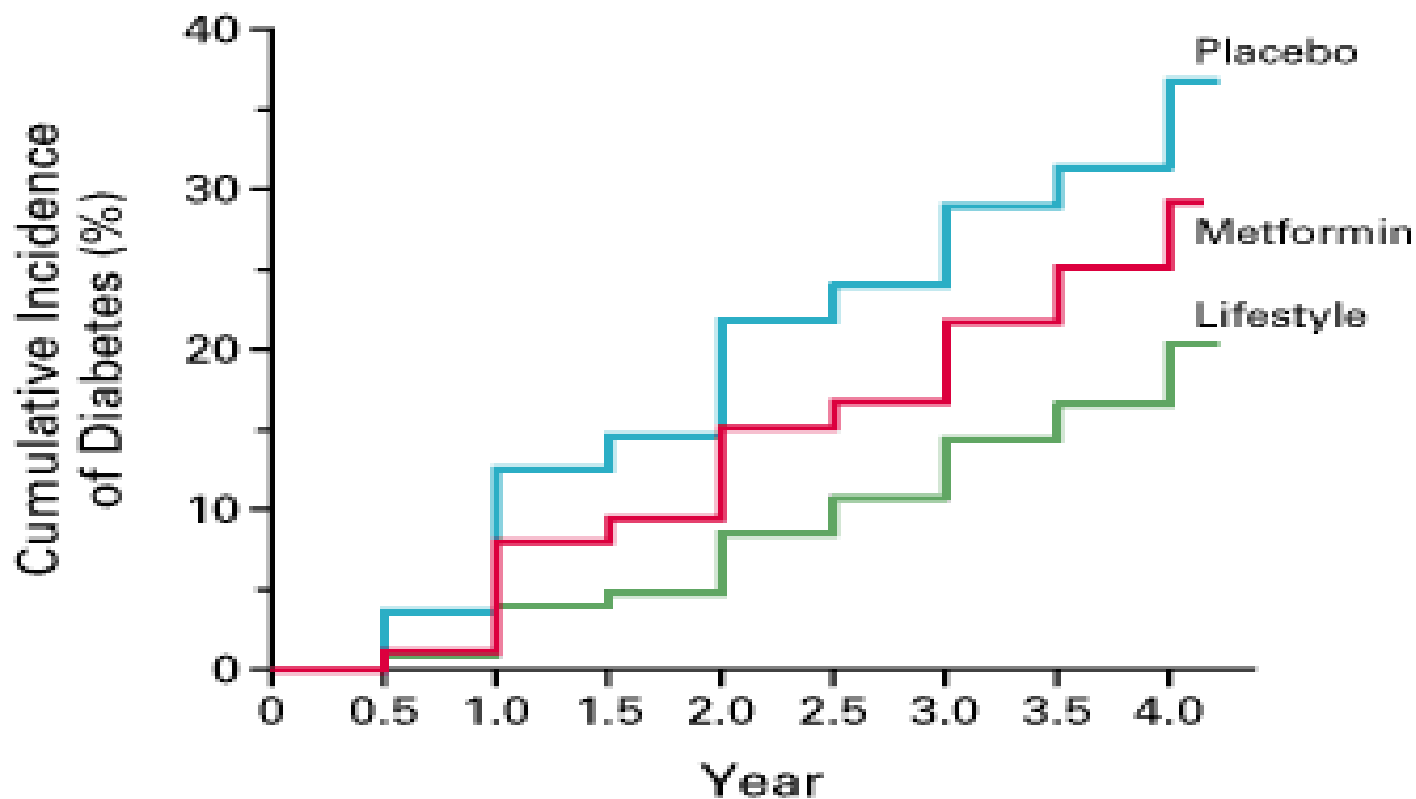
DPP: Mean Change in Leisure Physical Activity



DPP: Mean Weight Change



DPP: Incidence of Diabetes





Finnish Diabetes Prevention Study

Intervention vs controls at 3 years:

- ◆ Increased physical activity
- ◆ Reduced fat intake (5 vs 3%)
 - Reduced weight (3.5 vs 1kg)
 - Reduced waist circumference (3.3 vs 1.2 cm)
 - Less diabetes (9 vs 20%)



Prevention studies: conclusion

- ◆ **Structured education** with specific goals of **behaviour change** leading to weight reduction and increased physical activity is effective in preventing diabetes
- ◆ In DPP, **more effective than medication**
- ◆ **Long term** (1-3 monthly for 3-4 years)



Structured education in type 2 diabetes

At Diagnosis:

◆ DESMOND

– RCT

– 824 subjects from 207 practices across UK



DESMOND

- ◆ 6 hours (in 1 or 2 sessions) of group education within 12 weeks of diagnosis
- ◆ Based on educational theories (common sense, dual process, social learning)
- ◆ Philosophy of patient empowerment
- ◆ Learning elicited not taught
- ◆ Control group: 6 hrs HCP time for education



DESMOND: curriculum

- ◆ Lifestyle factors
 - Food choices
 - Physical activity
- ◆ Cardiovascular risk factors
- ◆ Consider medication as option
- ◆ Choose a specific achievable goal of behaviour change to reduce risk



DESMOND results

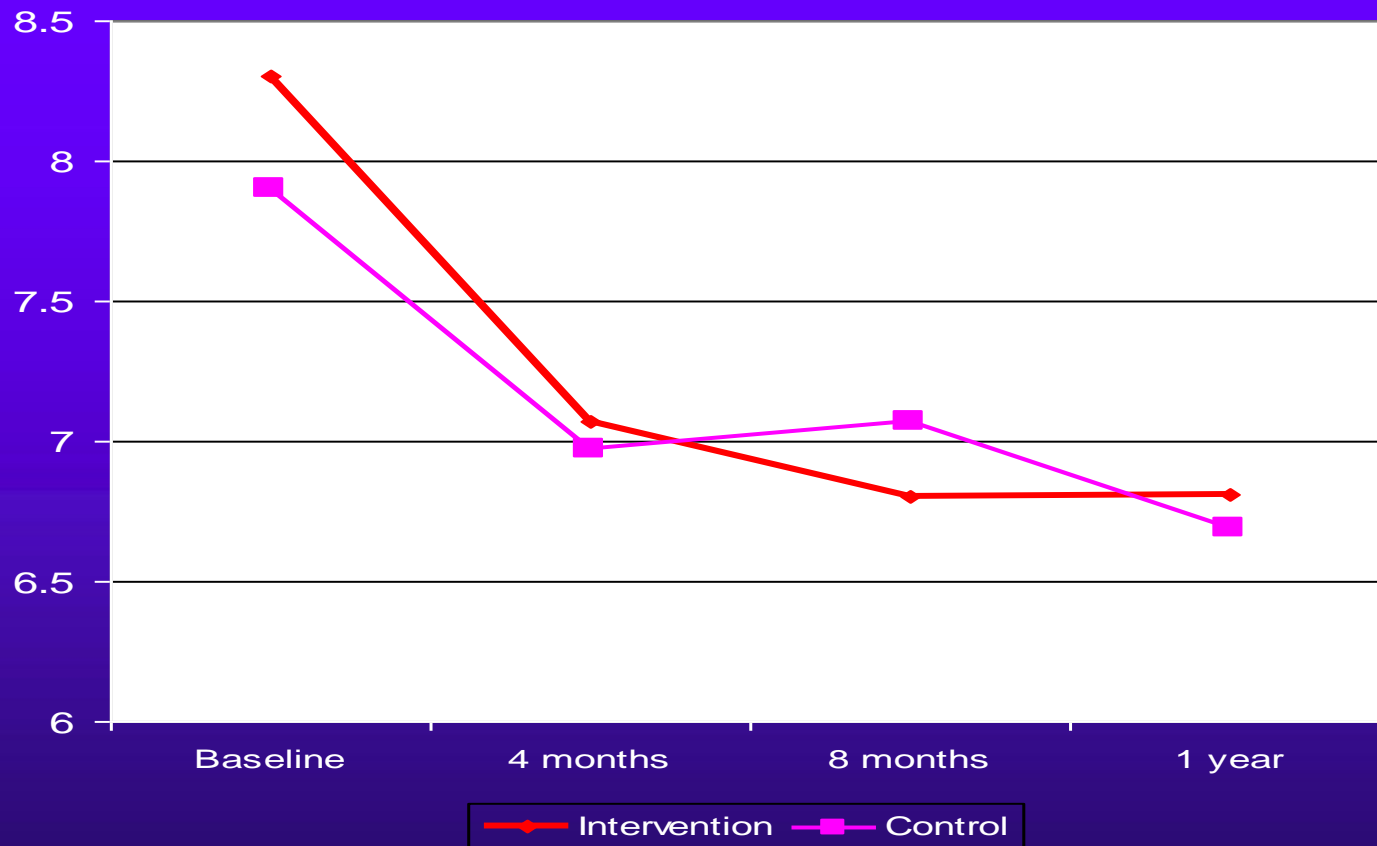
- ◆ More positive illness beliefs

- Reduced body weight (3 vs 1.9 kg)

- Fewer smokers (14 to 11% vs no change)

- Reduced 10 year cardiovascular risk
(10.9 vs 13.6%)

DESMOND: HbA1c change





FOCUS

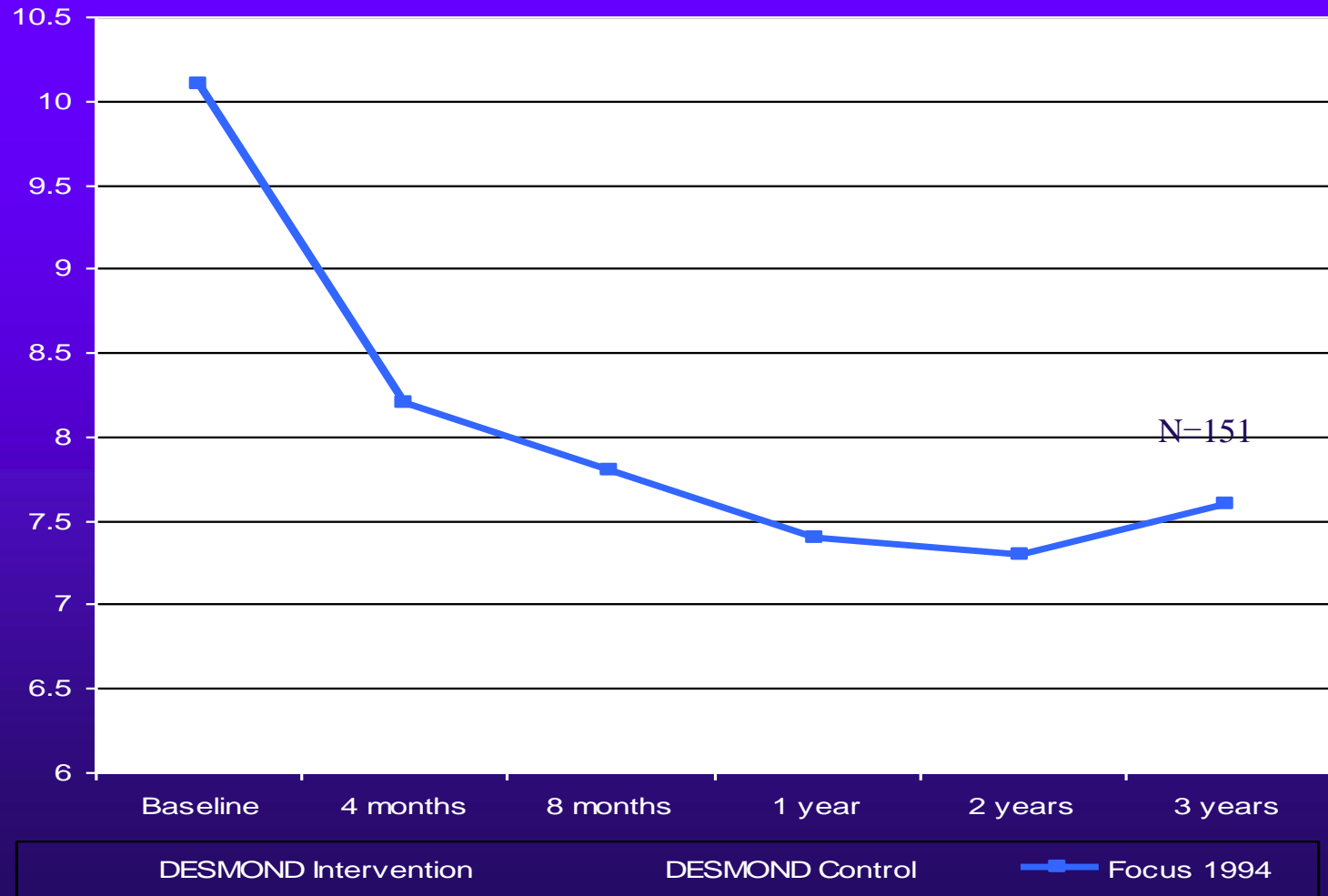
- ◆ Delivered in Bournemouth since 1993
- ◆ Open access, hospital based
- ◆ patients seen within one week of diagnosis
- ◆ 3 x 2 hr group sessions over 6 weeks followed by hospital clinic visit at 3 months



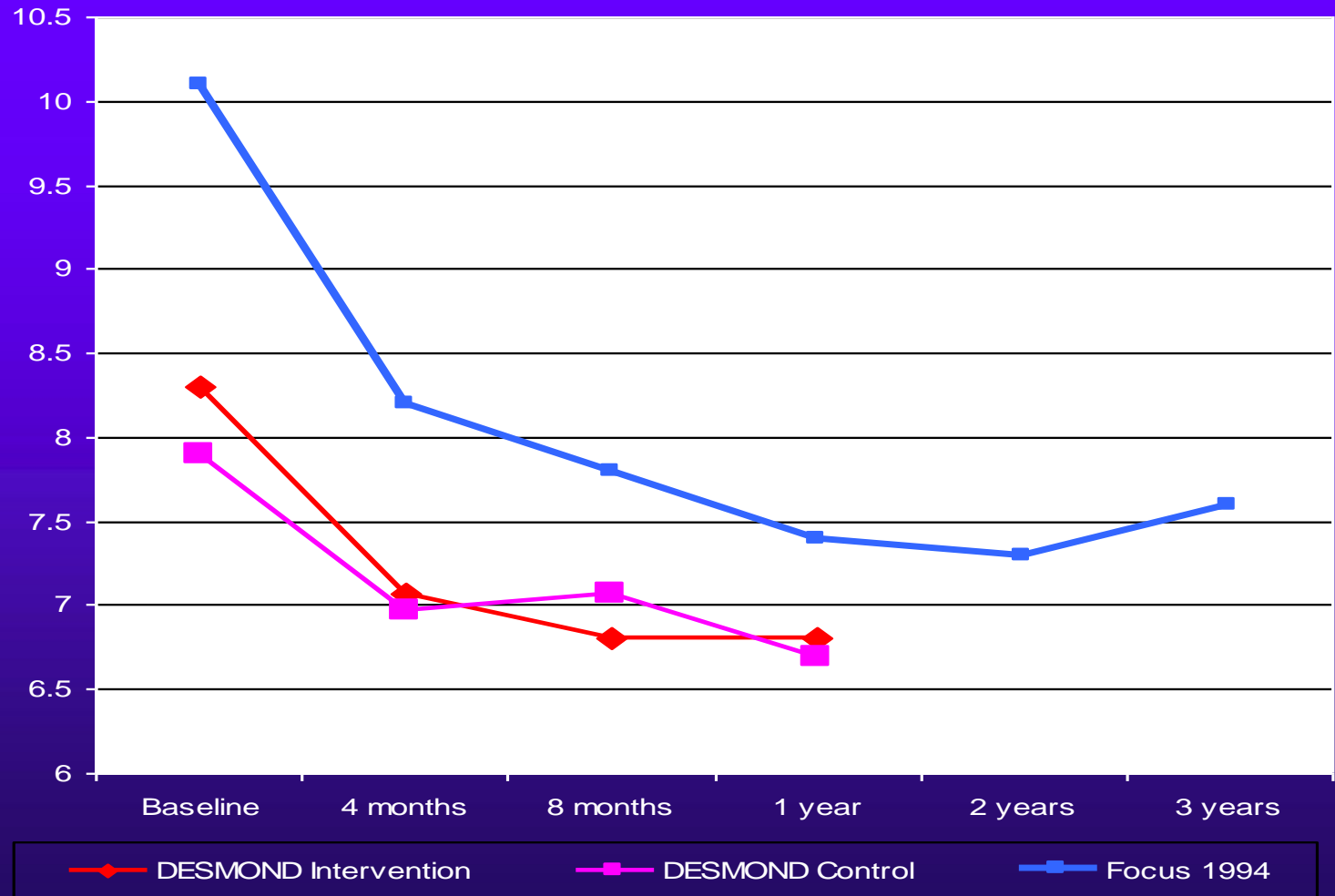
FOCUS: 1993 curriculum

- ◆ Information about diabetes
- ◆ Dietary advice on glycaemic control (and weight reduction where appropriate)
- ◆ Information about complications and how to reduce risk

FOCUS 1993: HbA1c change



FOCUS 1993: HbA1c change

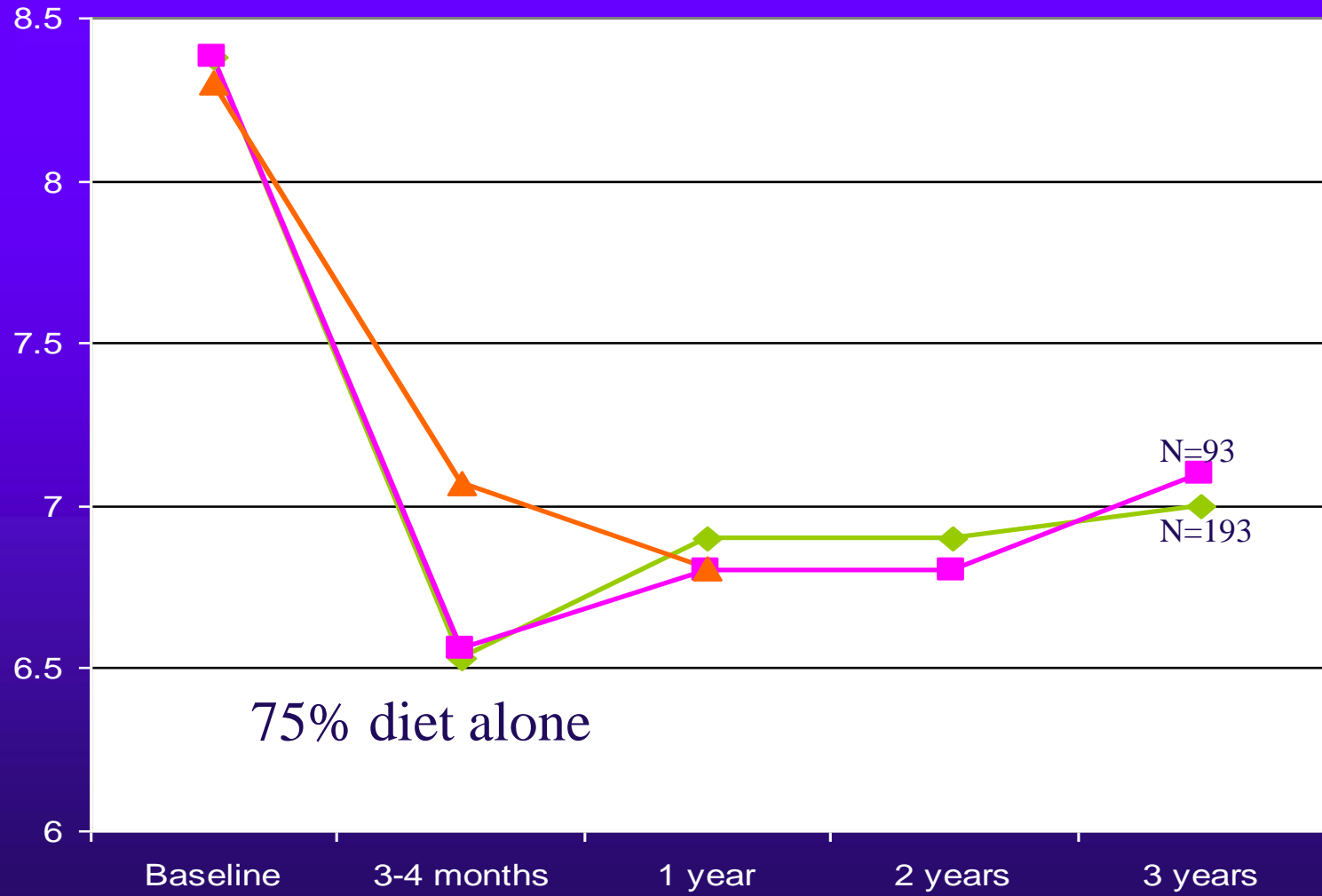




FOCUS: evolution

- ◆ 1998 (post UKPDS): focus on hypertension and vascular risk
- ◆ 2001: more interactive, more focus on weight reduction
- ◆ 2003: second site to reduce group size
- ◆ 2004:
 - participated in DESMOND pilot in one site (Focus continued at the other)
 - Focus adapted to adopt some features of DESMOND within same 3 session structure
 - managed by PCT

FOCUS 2004 and DESMOND



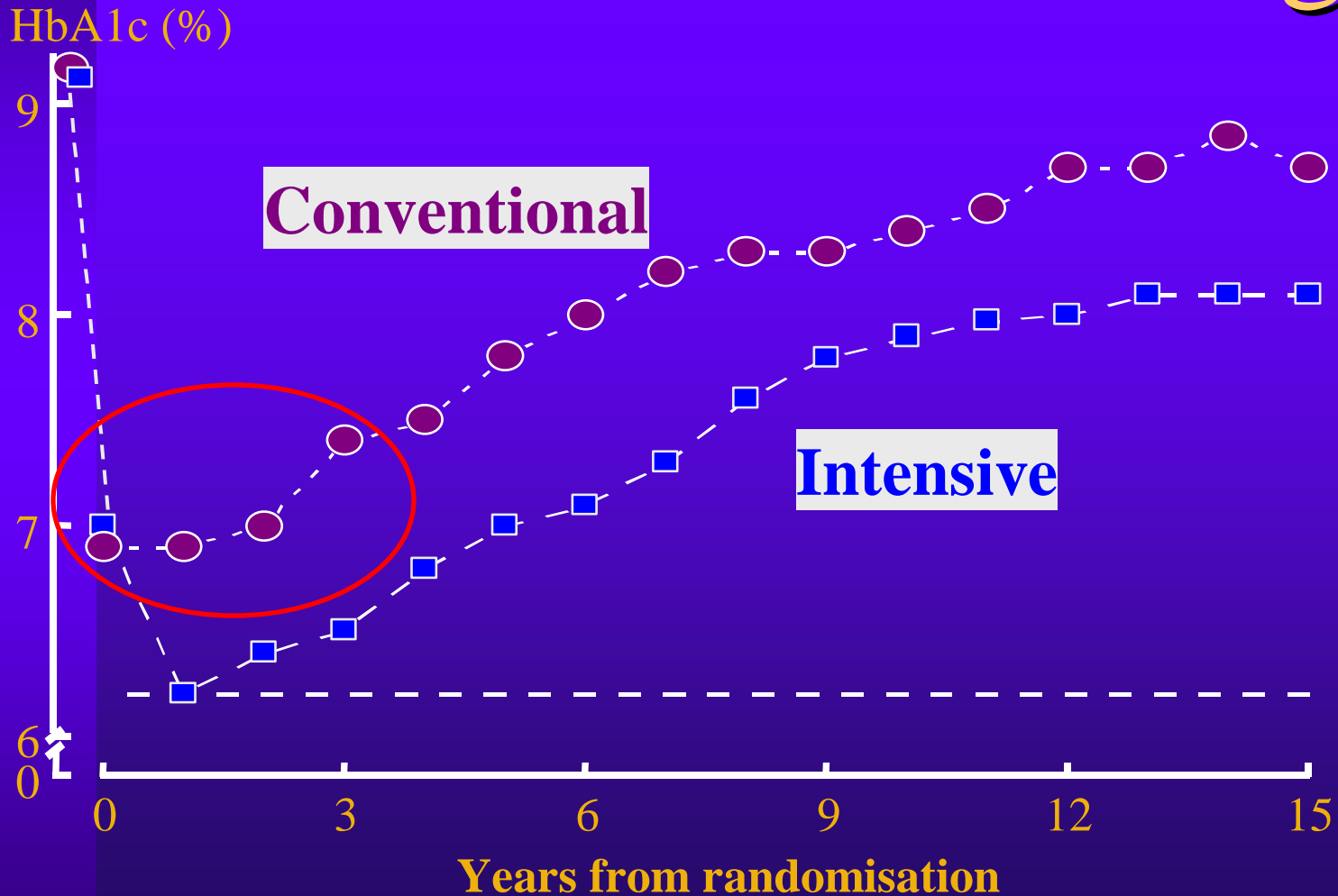
—◆— Focus 2004 —■— DESMOND 2004 —▲— DESMOND trial



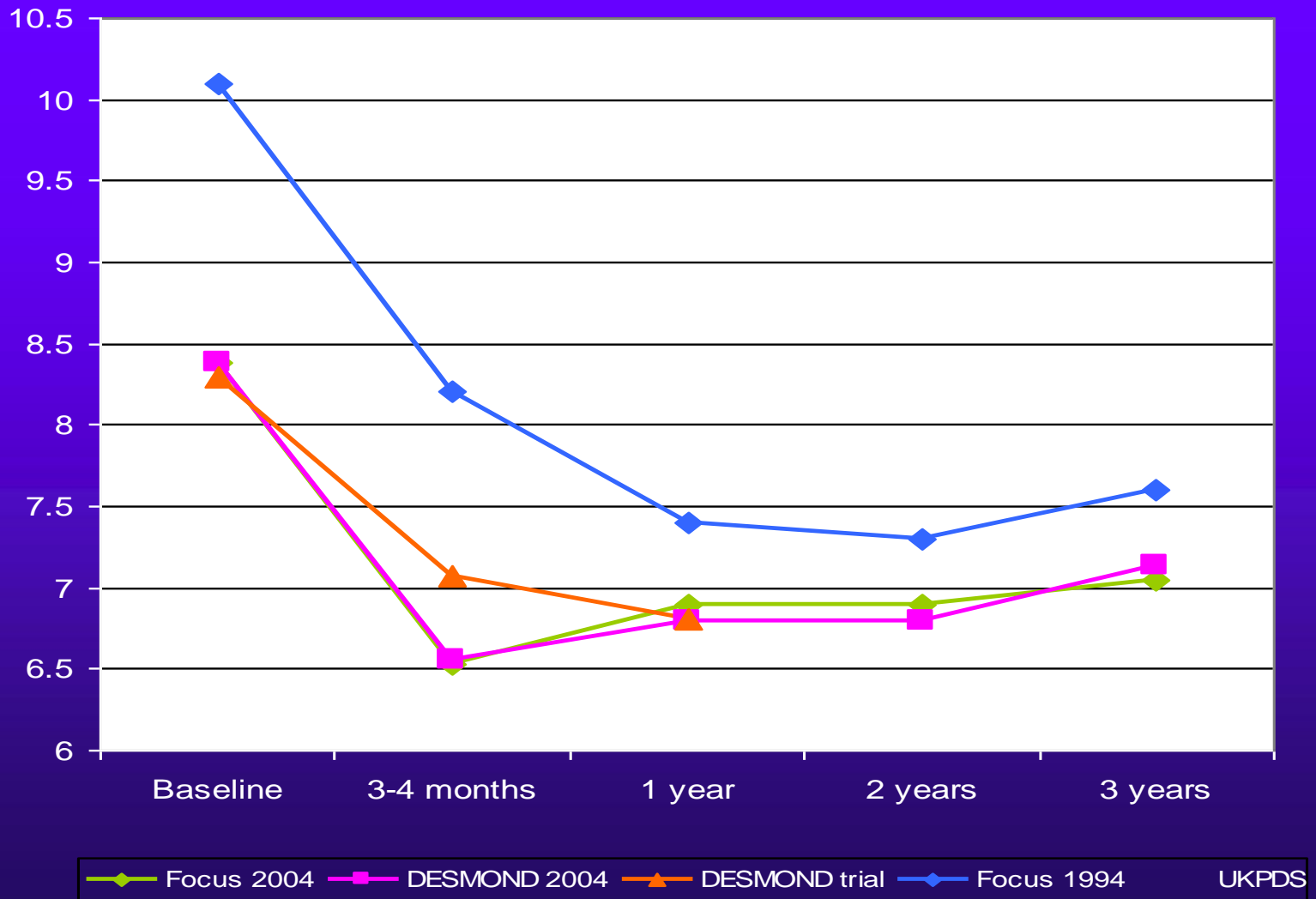
UKPDS: The original structured education programme?

- ◆ 3867 patients randomised to conventional or intensive treatment
- ◆ Entry if FBG > 6 mmol/l
- ◆ All received dietary advice at monthly intervals for 3 months from diagnosis
- ◆ Conventional treatment comprised 3 monthly review (incl dietary advice) and treatment if symptomatic or FBG > 15 mmol/l

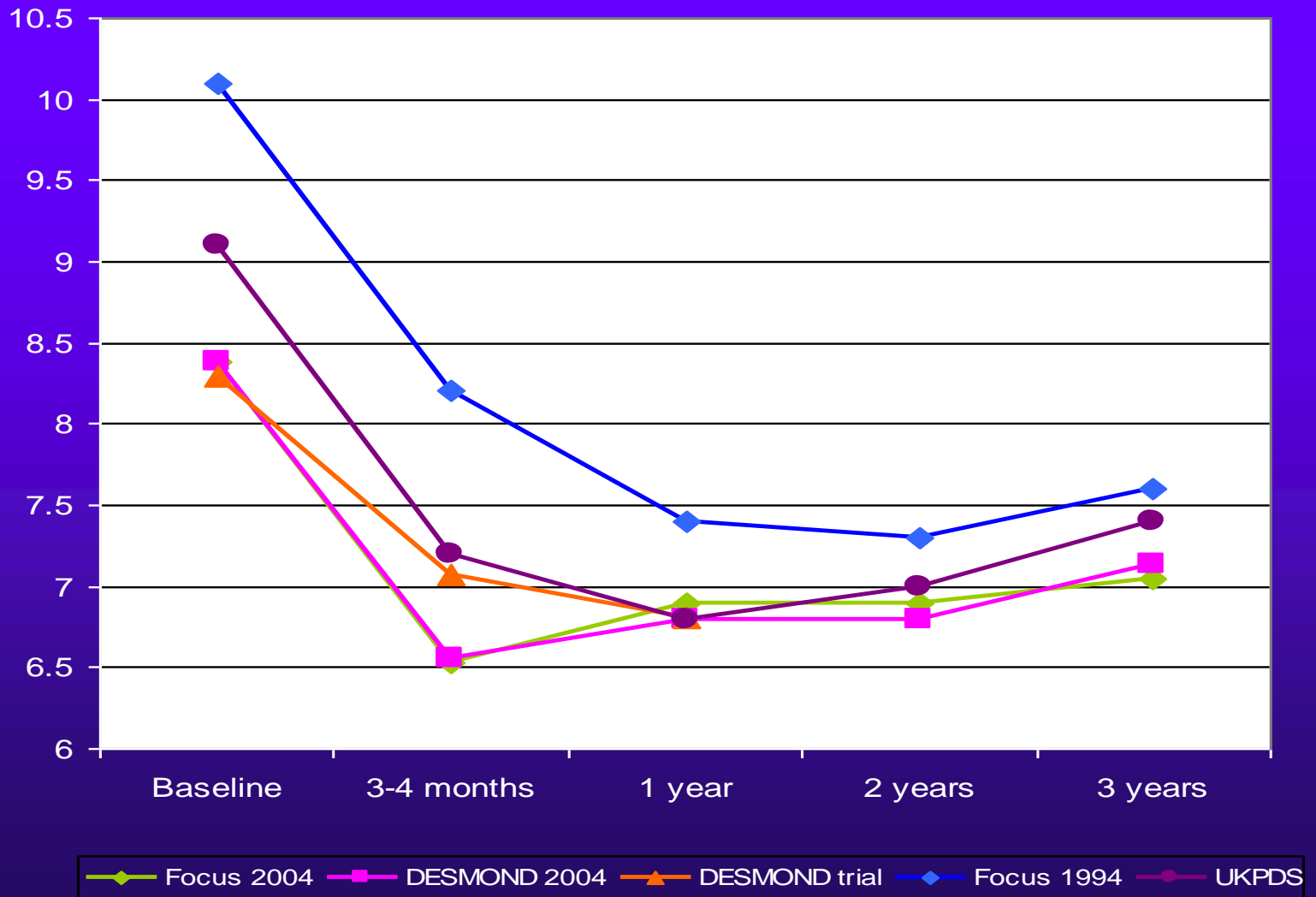
UKPDS: HbA1c change



Familiar pattern?



Familiar pattern?





Structured education in type 2 diabetes...

- ◆ Is effective in reducing HbA1c at diagnosis using various methods to effect behaviour change
- ◆ The challenge is to maintain that benefit in the longer term



The Italian Experience

- ◆ Trento (Turin)
- ◆ 112 patients in hospital setting
- ◆ Age 62, disease duration: 9 years
- ◆ Randomised to group vs individual ongoing care
- ◆ 3 monthly sessions (1 hour) for 3 years
- ◆ 1-2 physicians and an educationalist



Trento: curriculum

- ◆ Group programme covered:
 - Burden of overweight
 - Choosing food, meal planning
 - Physical exercise
 - Smoking cessation
 - Preventing complications
- ◆ Individual review afterwards as required



Trento: results

- ◆ Improved diabetes knowledge
- ◆ Improved problem solving ability
 - Improved quality of life
 - Reduced body weight (2.6 vs 0.9kg)
 - Improved HbA1c

Trento: HbA1c change





X-Pert (Lancashire)

- ◆ 314 subjects, age 61 yrs, disease duration 6.7 yrs
- ◆ Six weekly 2 hr sessions delivered by research dietitian
- ◆ Controls: routine care plus GP, nurse and dietitian review (total 55mins)
- ◆ Goal: to develop skills and build confidence to enable patients to make informed decisions about their self care
- ◆ Empowerment and discovery learning



X-pert: curriculum

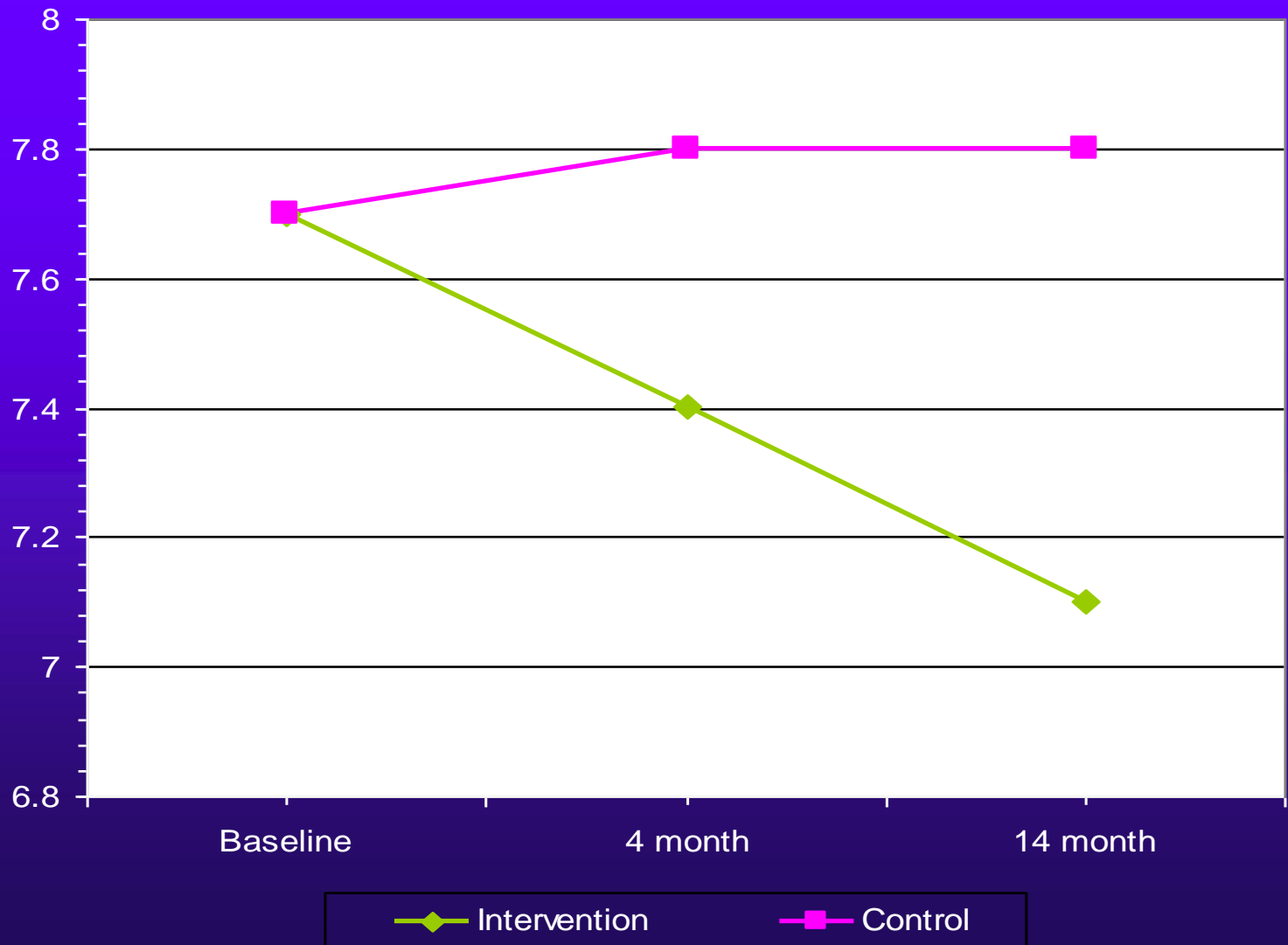
1. What is diabetes?
2. Weight management
3. Carbohydrate awareness
4. Supermarket tour
5. Complications and prevention
6. Evaluation and question time



X-pert: results

- ◆ Better diabetes knowledge
 - ◆ More exercise
 - ◆ More fruit and veg
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- Some weight loss (-0.5 vs +1.1kg)
 - Reduced waist circumference
 - Less need for medication
 - Better empowerment scores

X-pert: HbA1c change

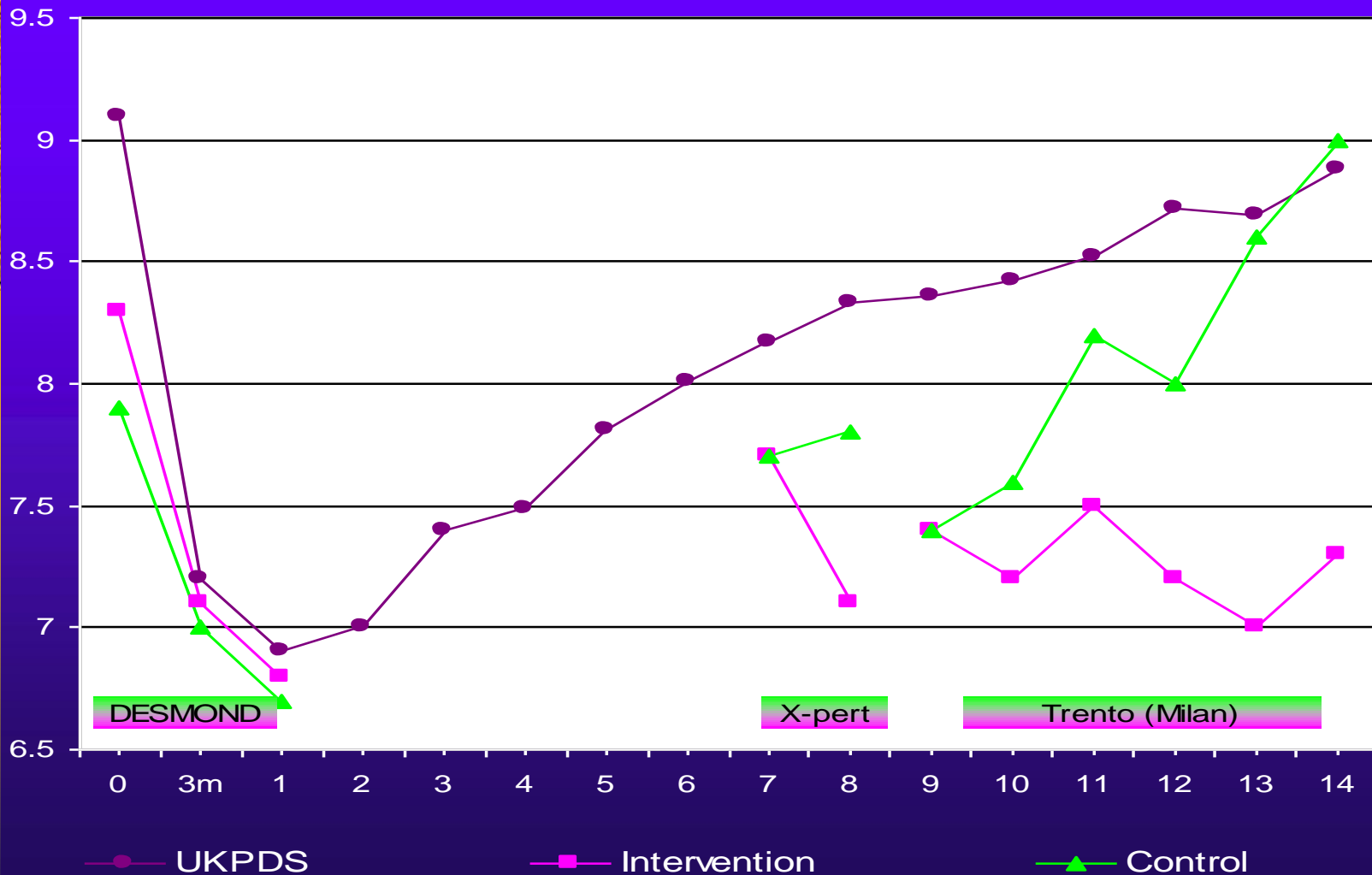




In established diabetes

- ◆ X-pert leads to improved HbA1c over one year
- ◆ Trento maintains stable control over 5 years with regular educational input
 - cf diabetes prevention programmes

Effect of educational interventions on HbA1c





Education at Diagnosis: do we need it?

- ◆ 80% on diet alone – hence improvement in HbA1c is **due to behaviour change** (diet and exercise)
- ◆ Important to know about **vascular risk** factors and what can be done about them
- ◆ Develops **problem solving** skills important for self-management
- ◆ Group education greatly **increases contact time** for each subject



Education: is it expensive?

- ◆ Bournemouth and Poole Focus programme
- ◆ Collaboration between PCT and two acute trusts
- ◆ 3 x 2hr sessions at diagnosis led by 2 educators
- ◆ Follow up at 6 months, to review HbA1c and vascular risk and plan management for coming year
- ◆ Designed to meet NICE criteria
- ◆ Will cost £100-125 per patient (includes educator training and quality control etc)



Conclusion

- ◆ Structured Education for Type 2 diabetes is both **inexpensive** and **proven**
- ◆ Education at diagnosis leads to HbA1c changes which remain for 2-3 years
- ◆ The challenge is to develop appropriate **follow-up education and support** to maintain the gains



How do you do it?

◆ At diagnosis

- Do DESMOND or X-Pert
- Do your own
 - Tailored to local population
 - Can adapt as needed
 - Local ownership leads to more commitment
 - Cheaper

◆ Ongoing

- Reuse existing resources to provide structured group care (in primary care)



Diabetes Education Network

- ◆ (formerly Type 1 Education Network)
- ◆ To support diabetes professionals develop and deliver patient education which fulfils NICE criteria
- ◆ First workshop on Type 2 diabetes education:
26th June 2008, Manchester

www.diabetes-education.net