

# Adolescent Self-harm

## *Origins, course and intervention*

George Patton

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*SPINZ Symposium Dunedin 28th-29th Nov 2006*



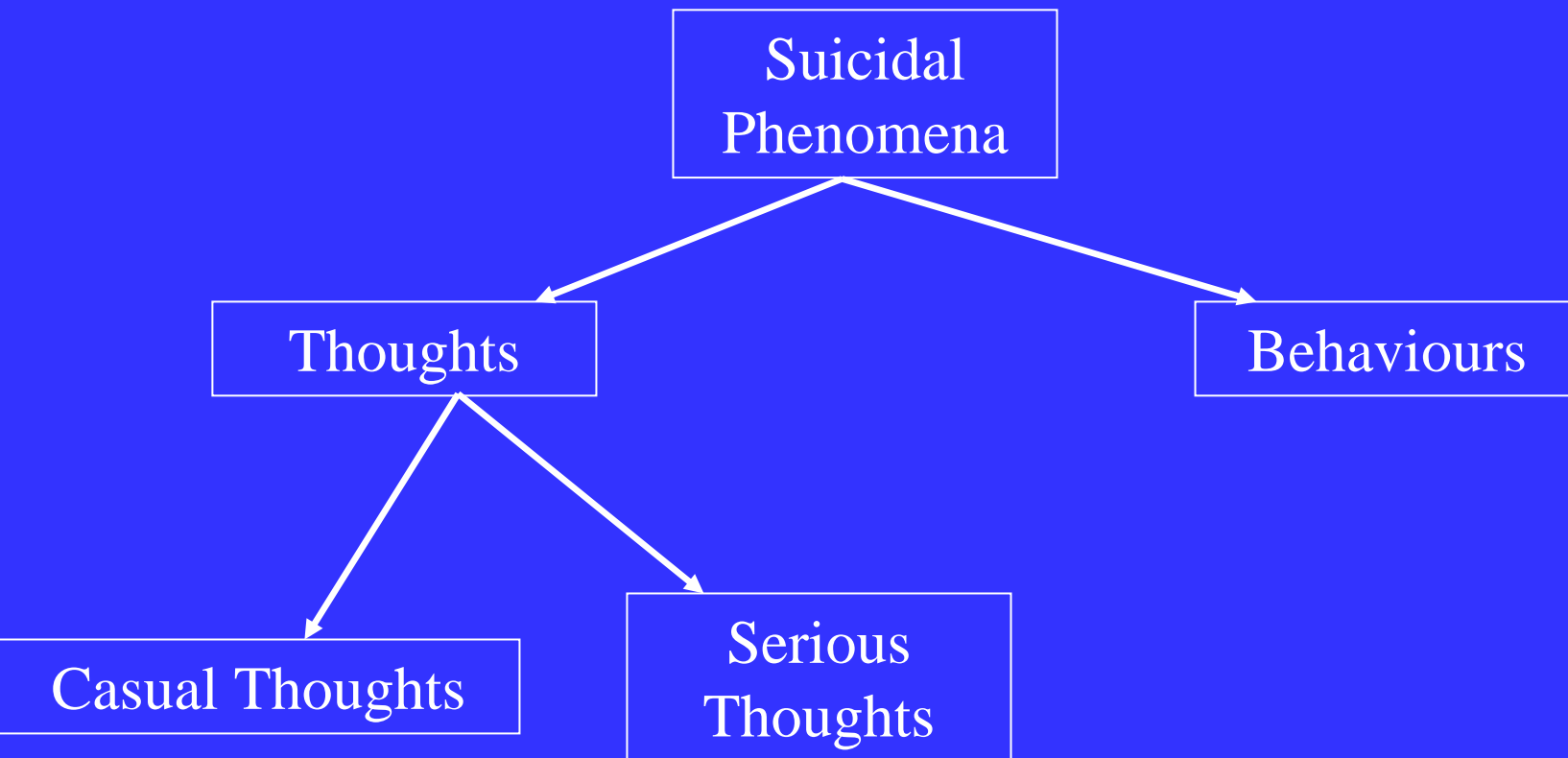
Suicidal  
Phenomena

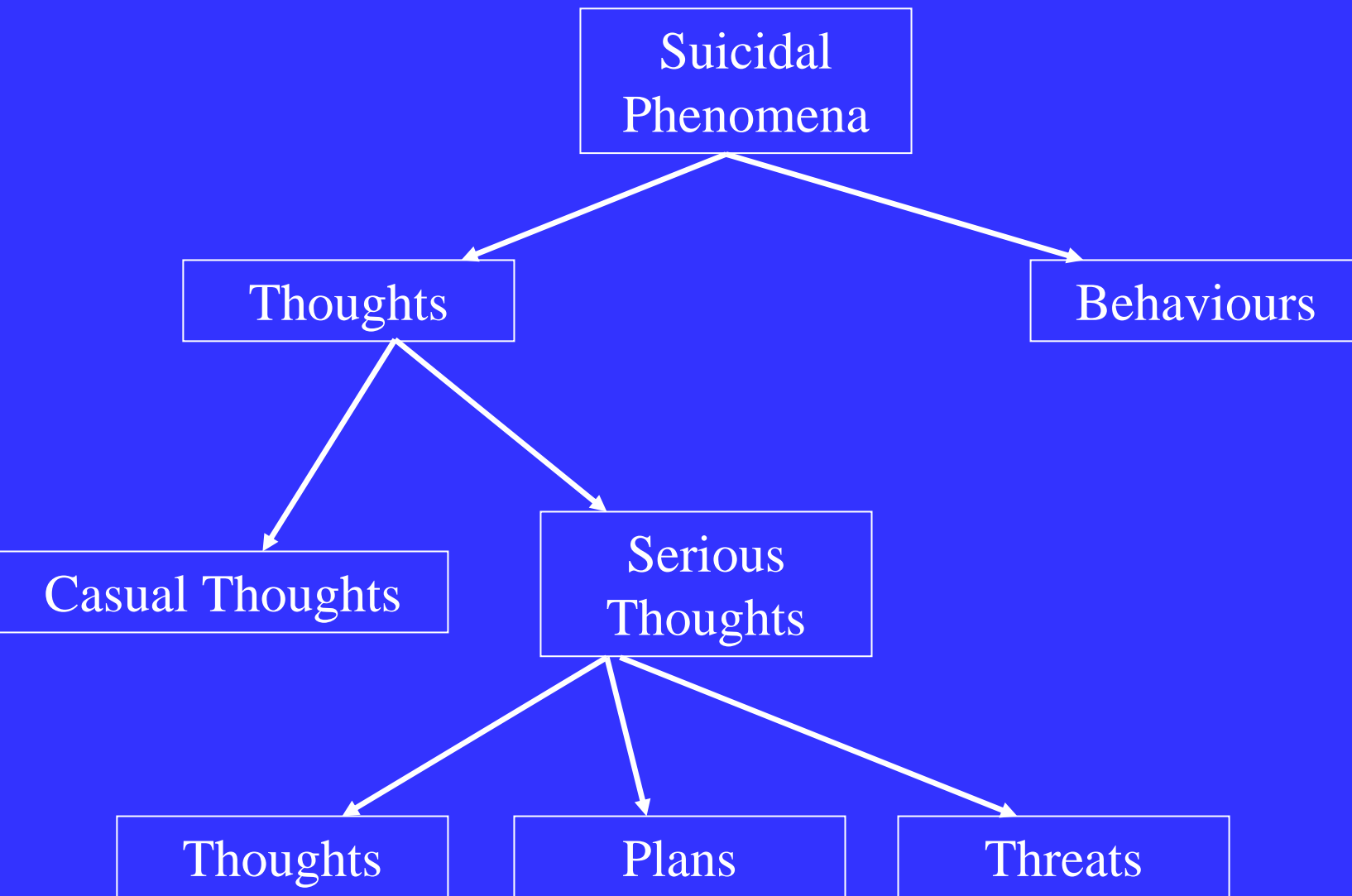
```
graph TD; A[Suicidal Phenomena] --> B[Thoughts]; A --> C[Behaviours];
```

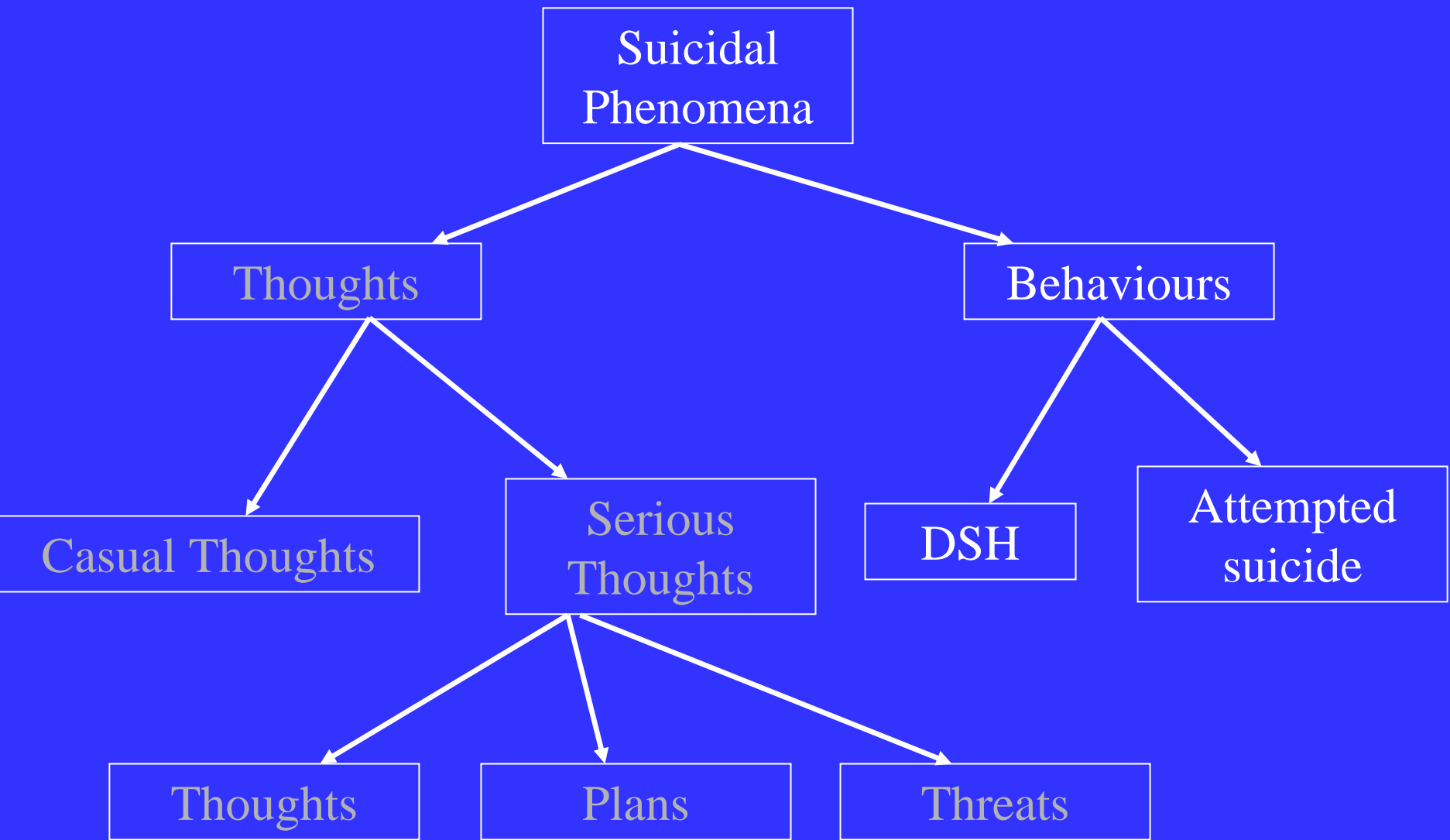
The diagram is a simple tree structure. At the top is a rectangular box containing the text 'Suicidal Phenomena'. Two white arrows originate from the bottom center of this box, pointing downwards and outwards to two separate rectangular boxes. The left box contains the text 'Thoughts' and the right box contains the text 'Behaviours'. All text and boxes are white against a solid blue background.

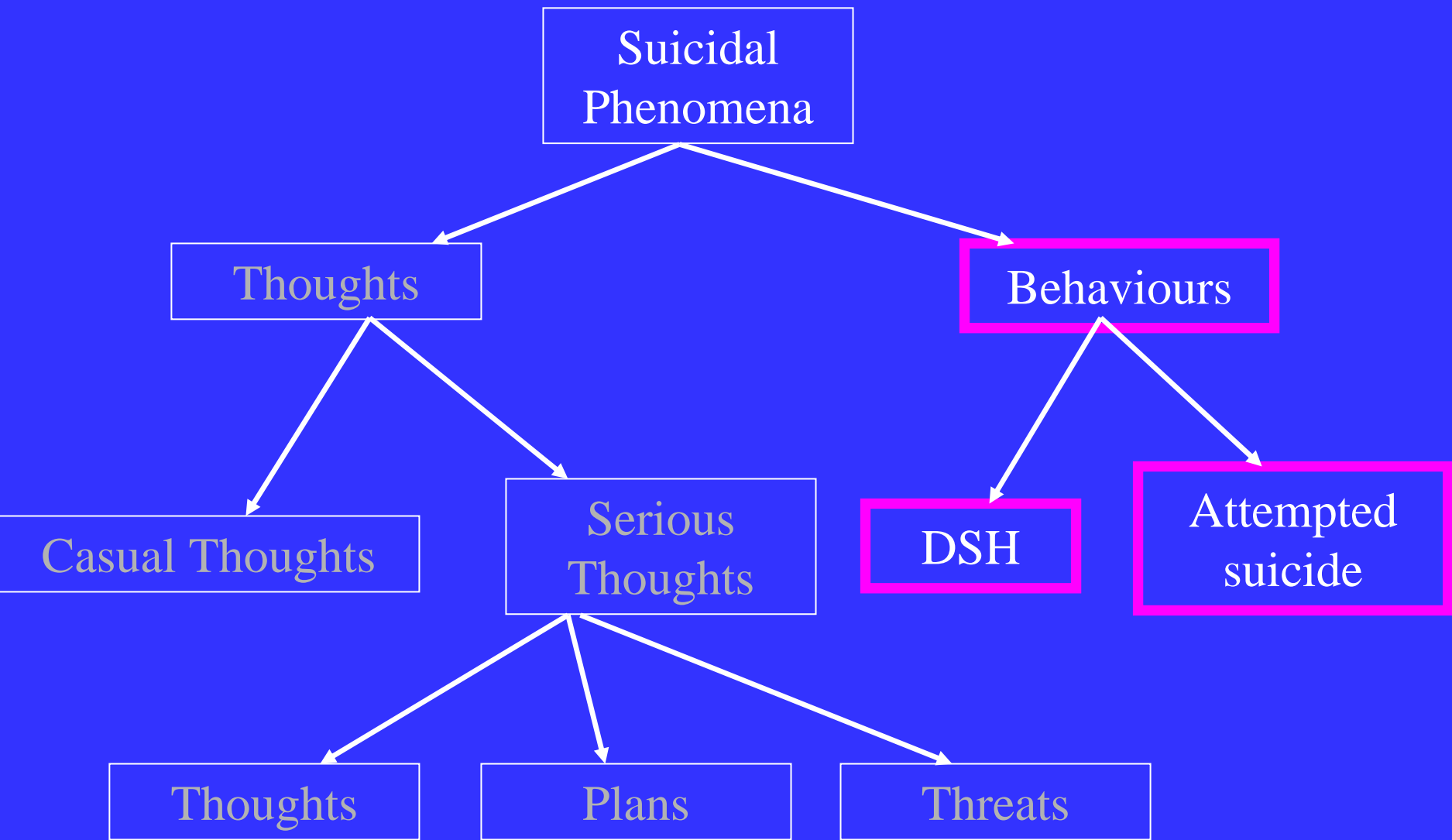
Thoughts

Behaviours







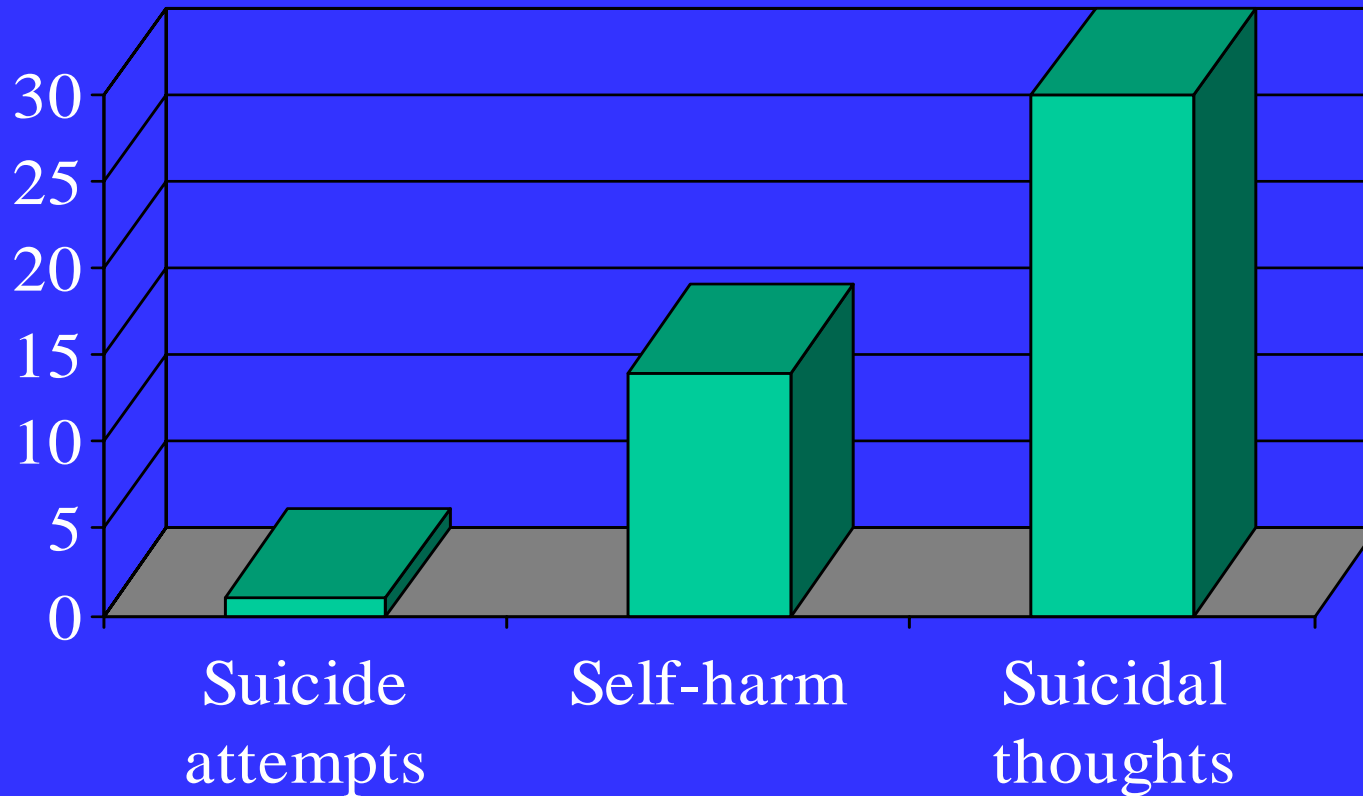


# Are suicidal phenomena increasing?



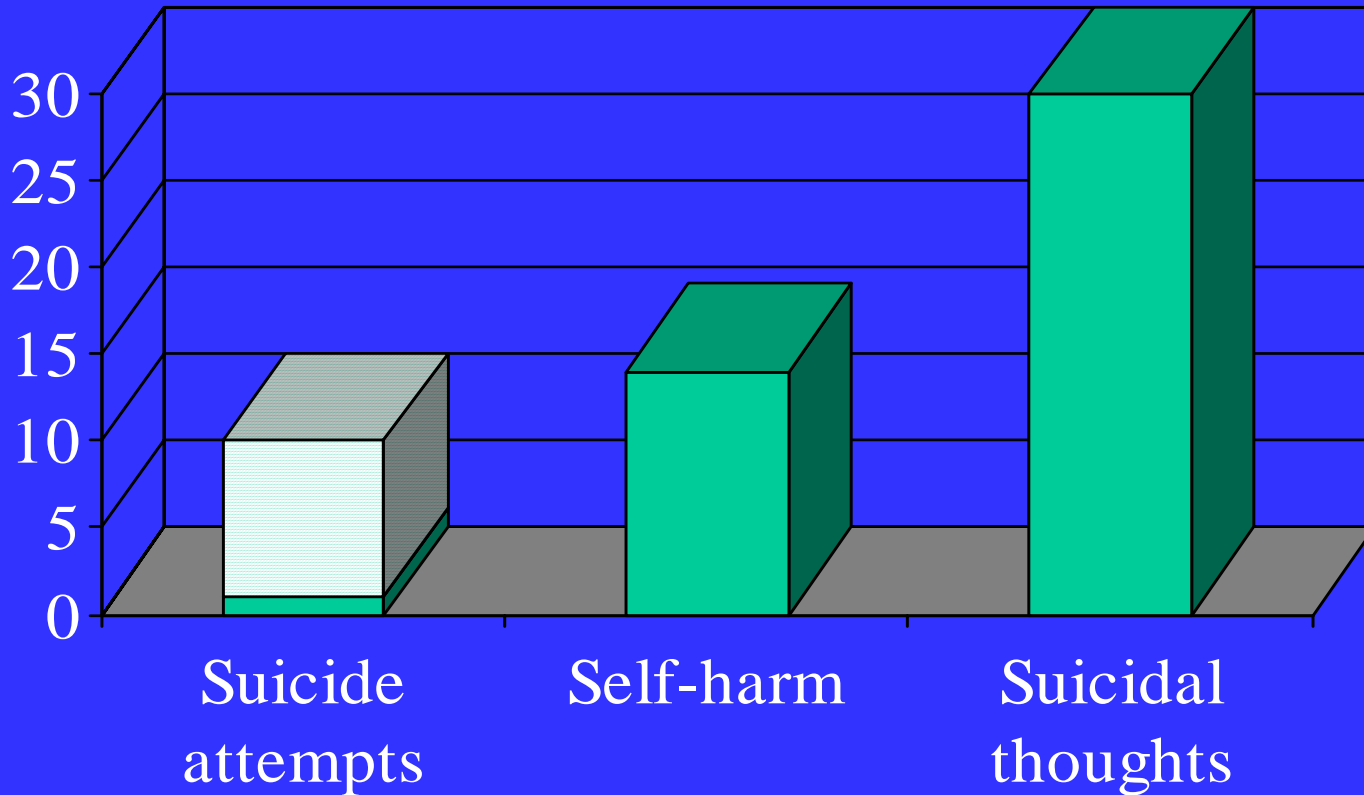
- 30% increase in reports to Childline in UK in 2004
- 30% increase in A&E self-harm decade to Millennium in Oxford

# How common are 'suicide phenomena' in the teens?



\* meta-analysis Evans et al

# How common are 'suicidal phenomena' in the teens?



\* meta-analysis Evans et al

# Perspectives on Suicide Phenomena

A Socio-cultural

B Developmental

C Prevention

D Clinical responses

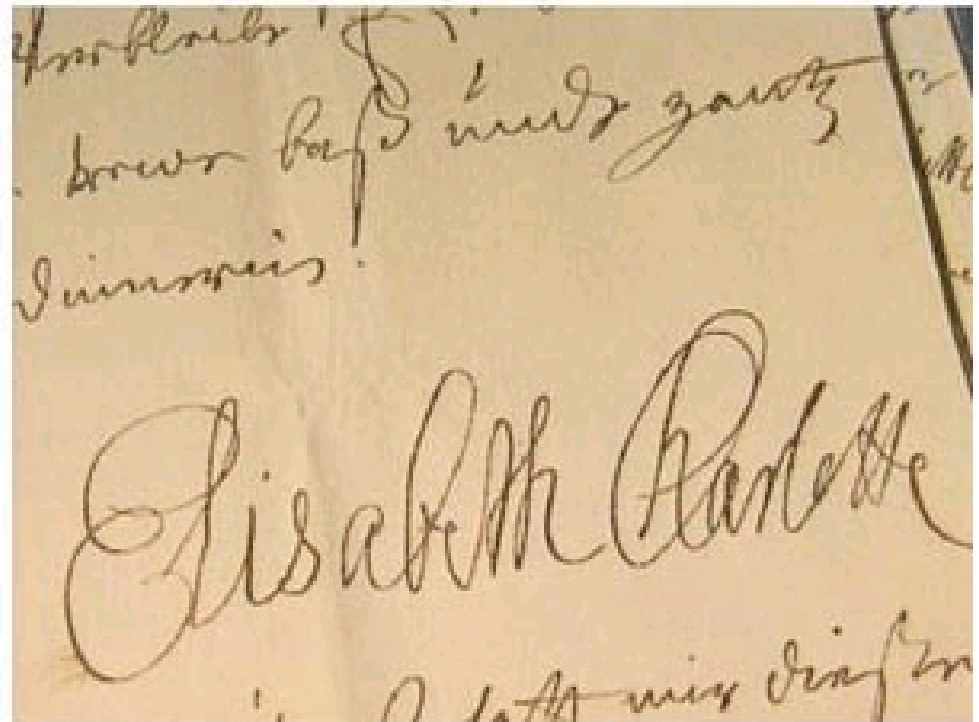
A Sociocultural

‘Anomie’

Contagion

# Elisabeth Charlotte von der Pfalz

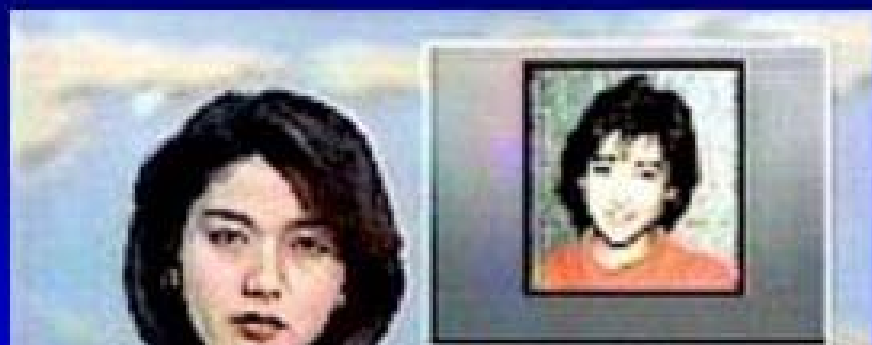
Wrote in 1718 that the Germans started to adopt „English manners“ (to commit suicide) and in 1722, that suicidal behaviour started also to be fashionable in Paris.



 A snippet of a handwritten manuscript in German. The text is written in a cursive script on aged paper. The visible text includes:
 

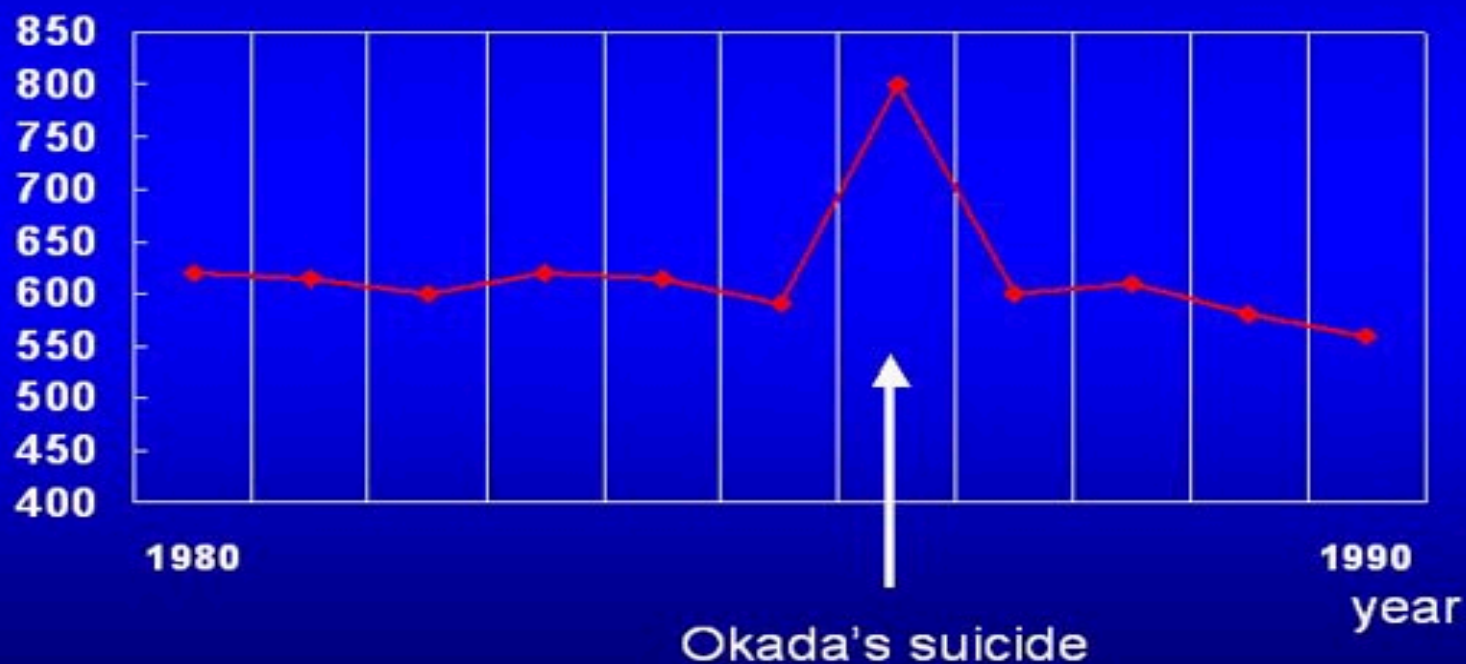
...  
 ...  
 ...  
 ...  
 Elisabeth Charlotte  
 ...

# Werther-Effect

„The sorrows of young Werther“, by J. W. Goethe, first published in 1774. Often quoted as „first case“ of suicide imitation caused by media. First reported prevention measures.



## The annual number of suicides under the age of 20



# Contagion & self-harm

- ‘Epidemics’ of self-harm in institutions

## Youth subcultures

- 10-fold higher rates of self-harm in Goths!

CONTAGION  
AND THE  
INTERNET

# Internet suicides in Japan

INTERNET MESSAGE BOARDS

Creating a culture of  
self-harm?

“Don’t get me wrong, I love this site.

But geez, take down the pictures.

As a fourteen year old cutter I will tell you that the pictures are extremely triggering,

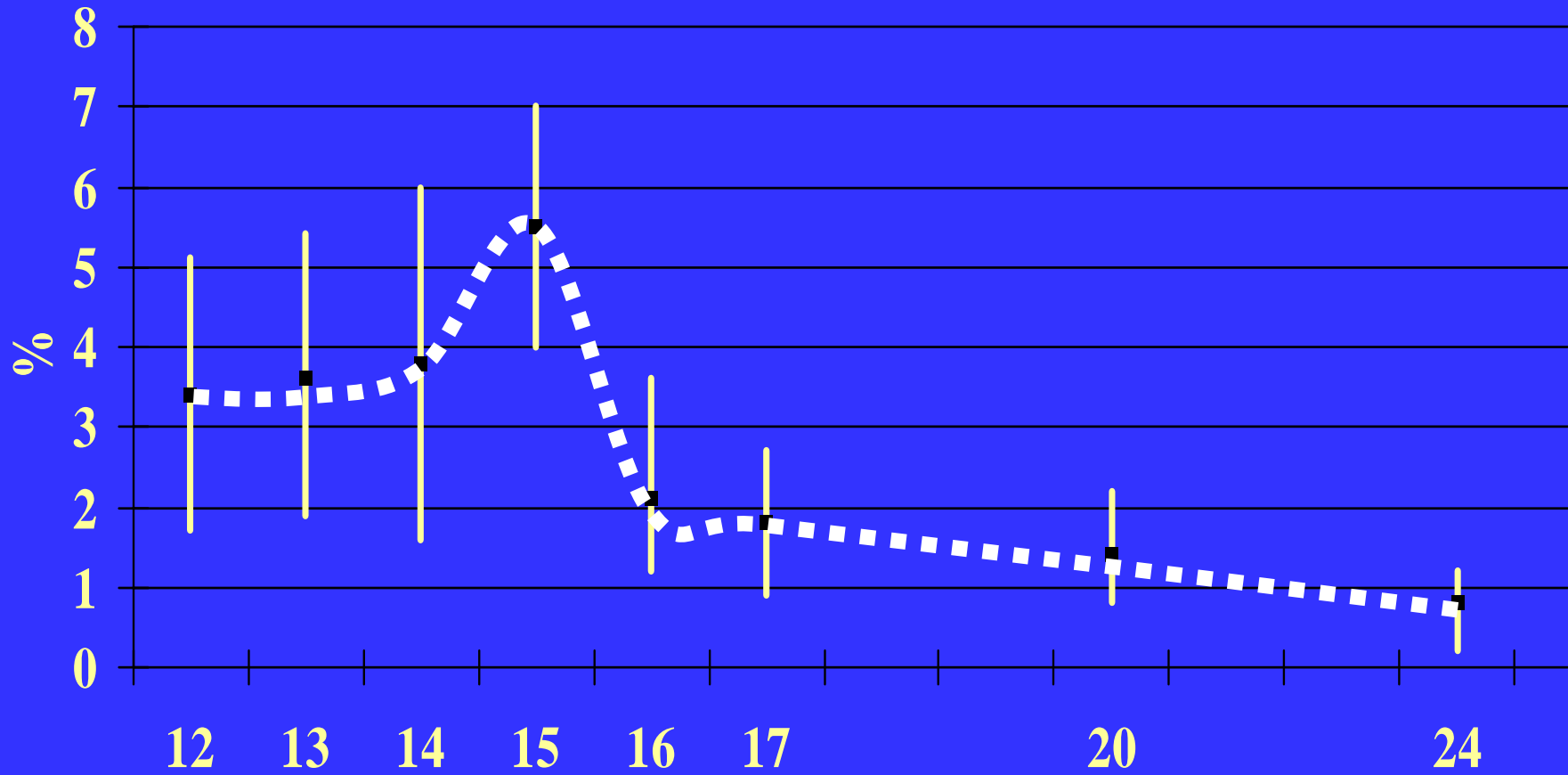
I only looked at some like once and I only got triggered (badly). They don’t help anyone and the people who take pictures of their cuts are attention seekers and just trying to see who can make worse cuts.

Do self injurers a favor and take the pictures down.“

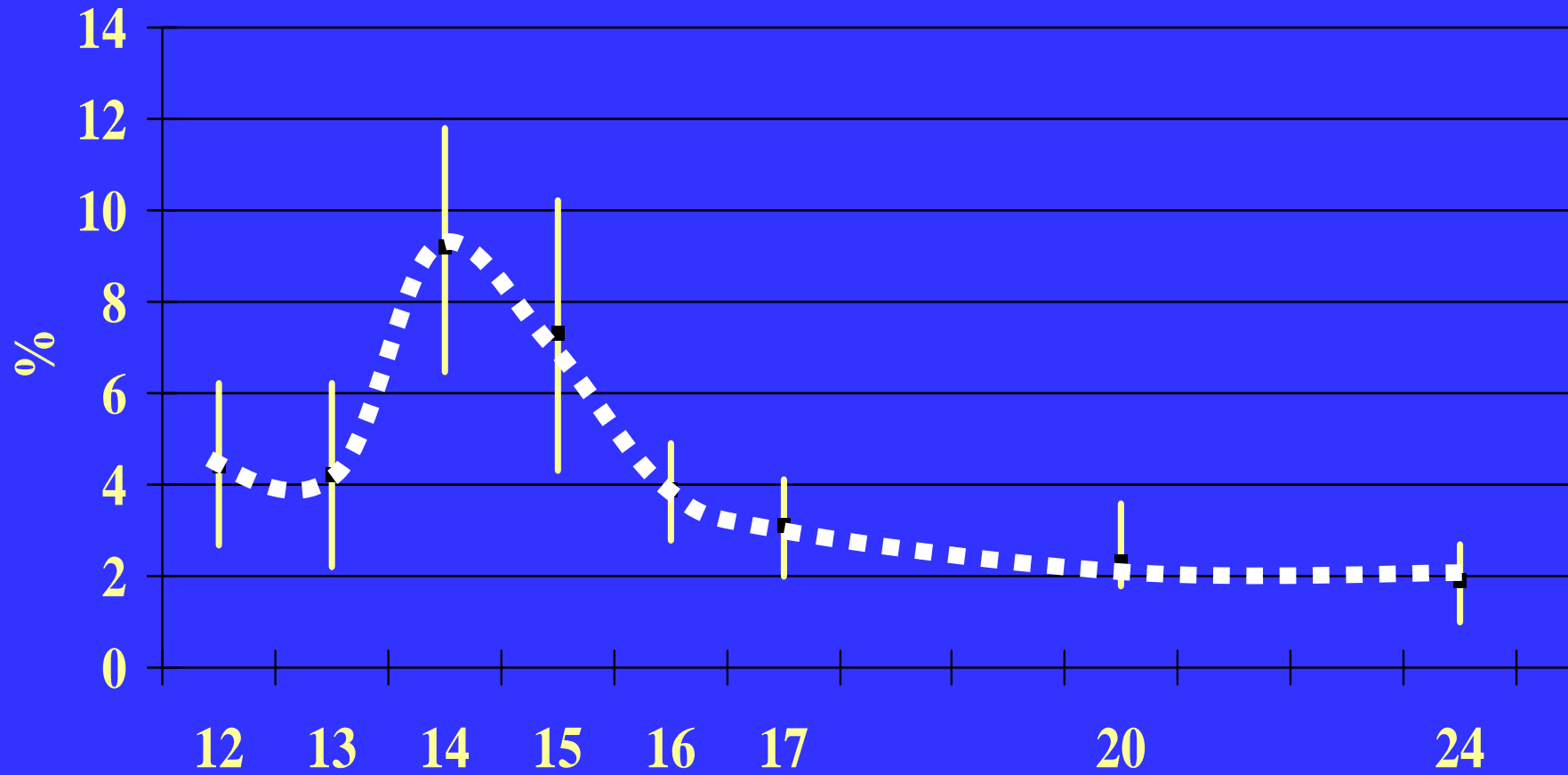
# B Developmental

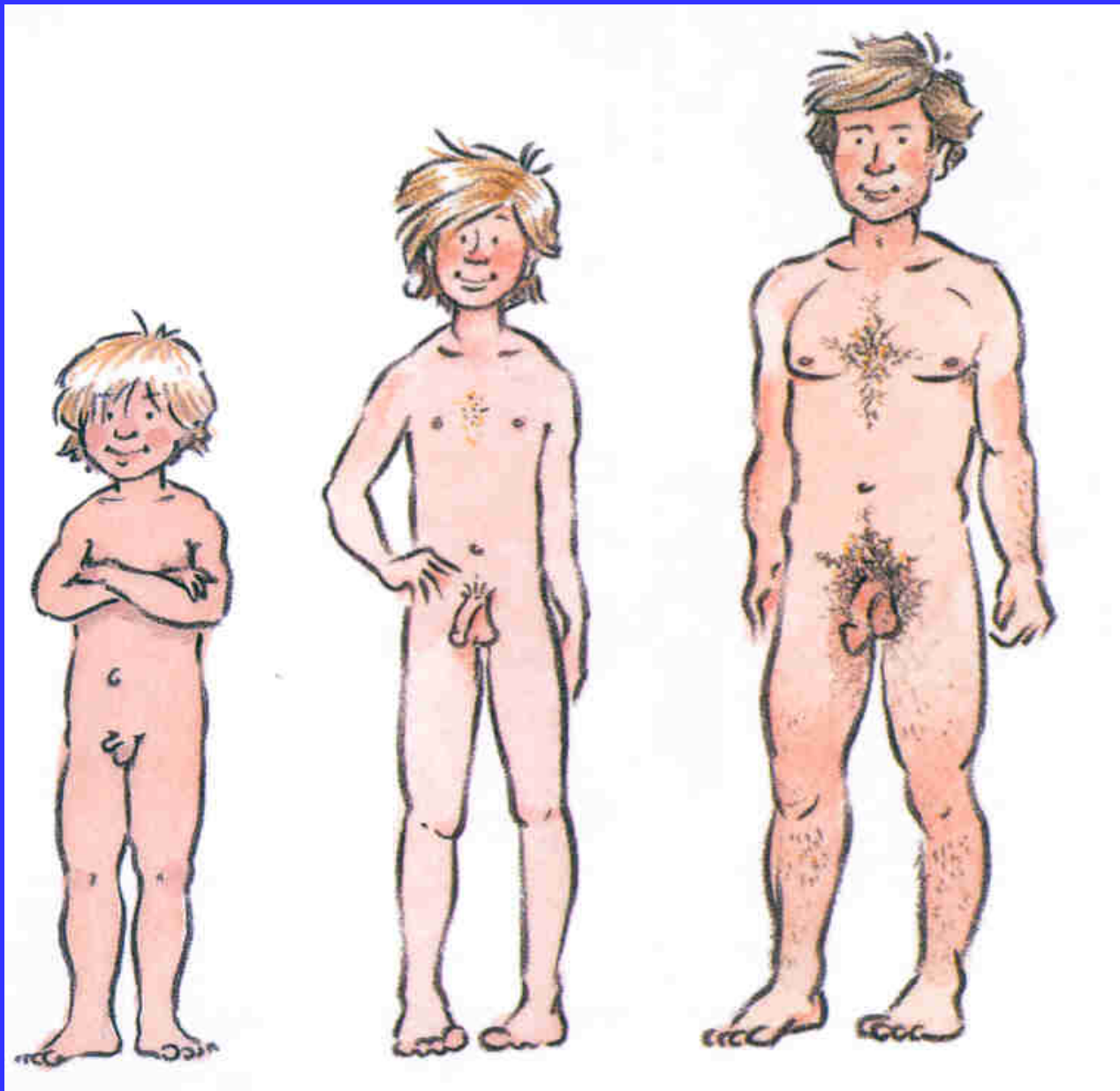
*Self-harm from a life course  
perspective*

# Male self-harm from 12 to 24 years



# Female self-harm from 12 to 24 years





# Pubertal Cascade

8 9 10 11 12 13 14 15 16 17 18 years



adrenarche

?

HPA axis

# Pubertal Cascade

8 9 10 11 12 13 14 15 16 17 18 years

adrenarche

?

HPA axis

gonadarche

HPG axis

# Pubertal Cascade

8 9 10 11 12 13 14 15 16 17 18 years

adrenarche

HPA axis

gonadarche

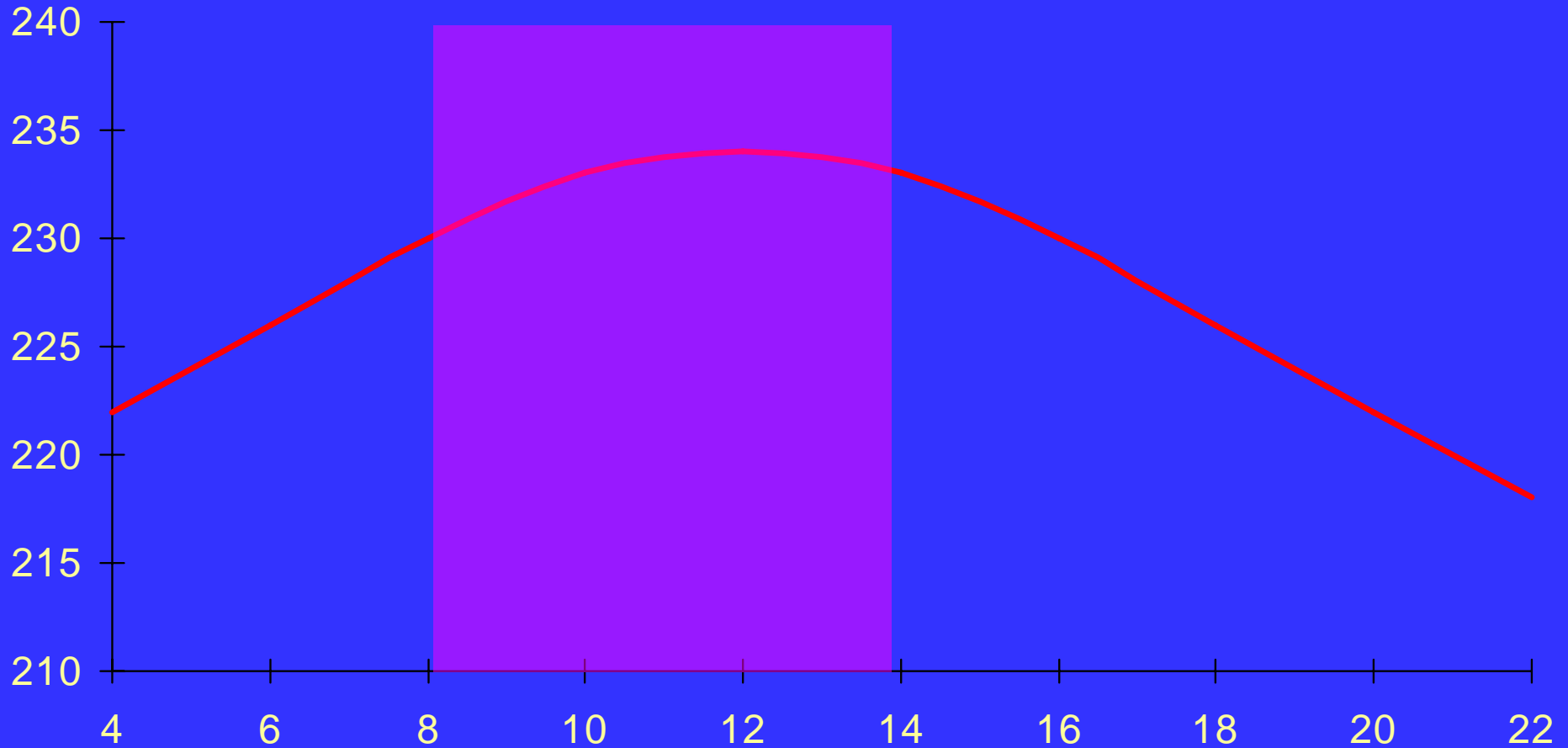
HPG axis

Growth spurt

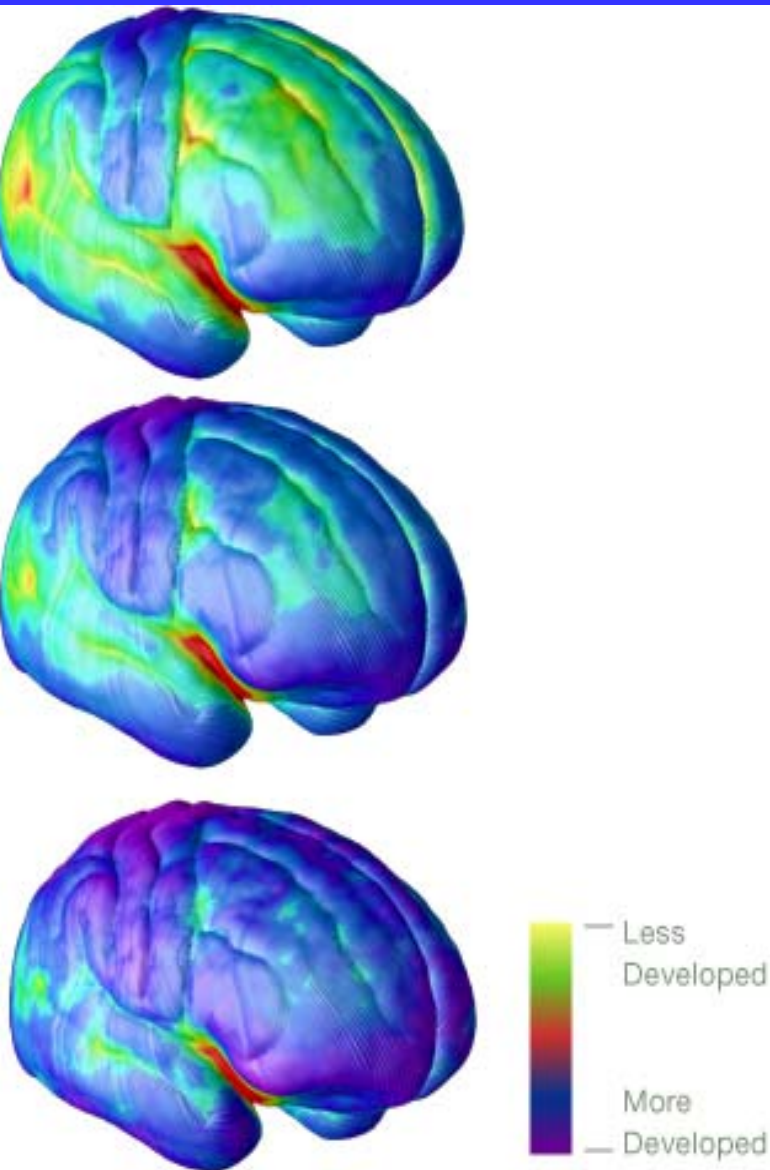
GH/somatomedin axis

Oxytocin system ?

# Frontal grey matter volume



# Adolescent brain development



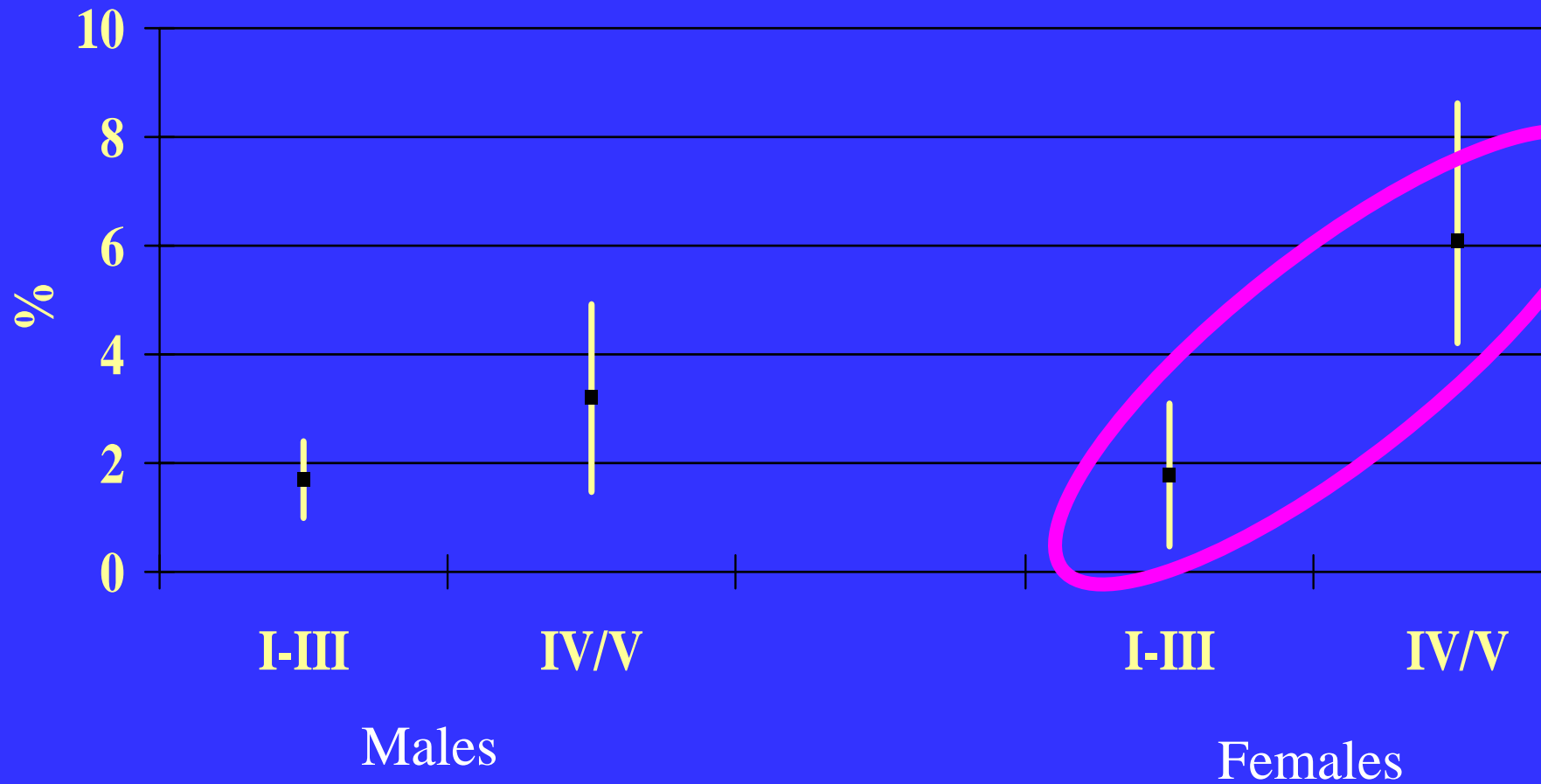
## Prefrontal cortex maturation

- extends into the third decade
  - impulse control
  - planning
  - emotional regulation

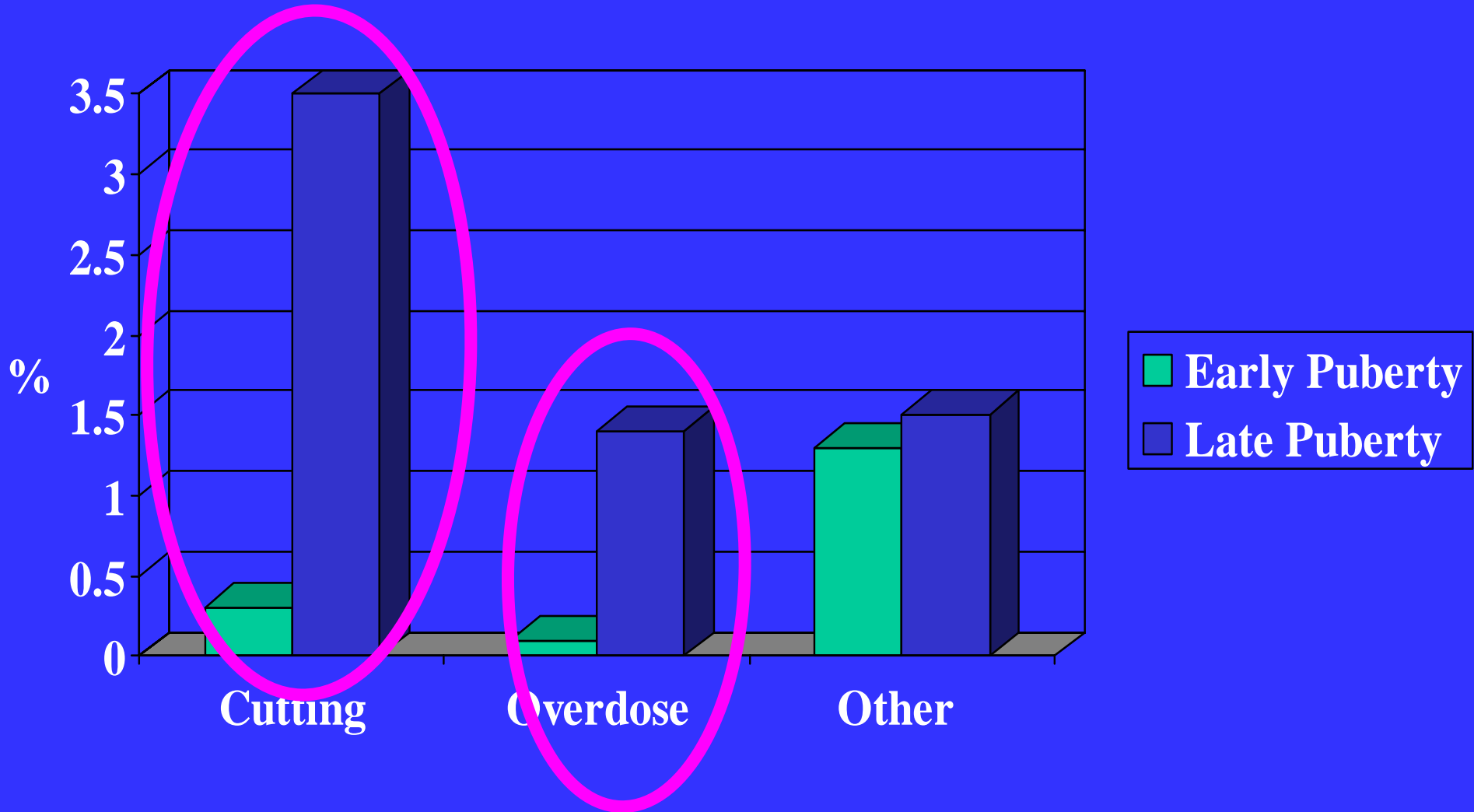
# ‘Adult’ problems commoner from puberty

- depression - anxiety syndromes
- deliberate self-harm
- substance abuse
- eating disorders
- psychosis
- pain syndromes
- type 1 diabetes
- obesity and cardiovascular risk

# Deliberate self harm by early and late pubertal stage



# Self-harm types in early vs late puberty in girls



# Self-harm in early adolescence

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## Pubertal stage

Pre/Early (n= 395)

1.0

Mid (n=1239)

2.1 (0.7, 6.3)

Late/Complete (n=1893)

4.3 (1.3, 14)

Age

0.51 (0.34, 0.78)

## Grade 9 (vs. 7)

Males (n=850)

1.3 (0.4, 1.6)

Females (n=902)

3.0 (1.1, 7.8)

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# Self-harm in early adolescence

---

## Pubertal stage

Pre/Early (n= 395)	1.0
Mid (n=1239)	2.1 (0.7, 6.3)
Late/Complete (n=1893)	4.3 (1.3, 14)

## Age

0.51 (0.34, 0.78)

## Grade 9 (vs. 7)

Males (n=850)	1.3 (0.4, 1.6)
Females (n=902)	3.0 (1.1, 7.8)

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Pubertal risks

The diagram features a dark blue background with a central vertical light blue band. A white horizontal arrow points from left to right across the middle. A magenta arc is positioned above the arrow, starting on the left and ending on the right side of the light blue band. A cyan arc is positioned below the arrow, starting on the left side of the light blue band and extending to the right edge of the frame. Two white rectangular boxes with thin borders contain the text 'Pubertal risks' and 'Brain maturation' respectively.

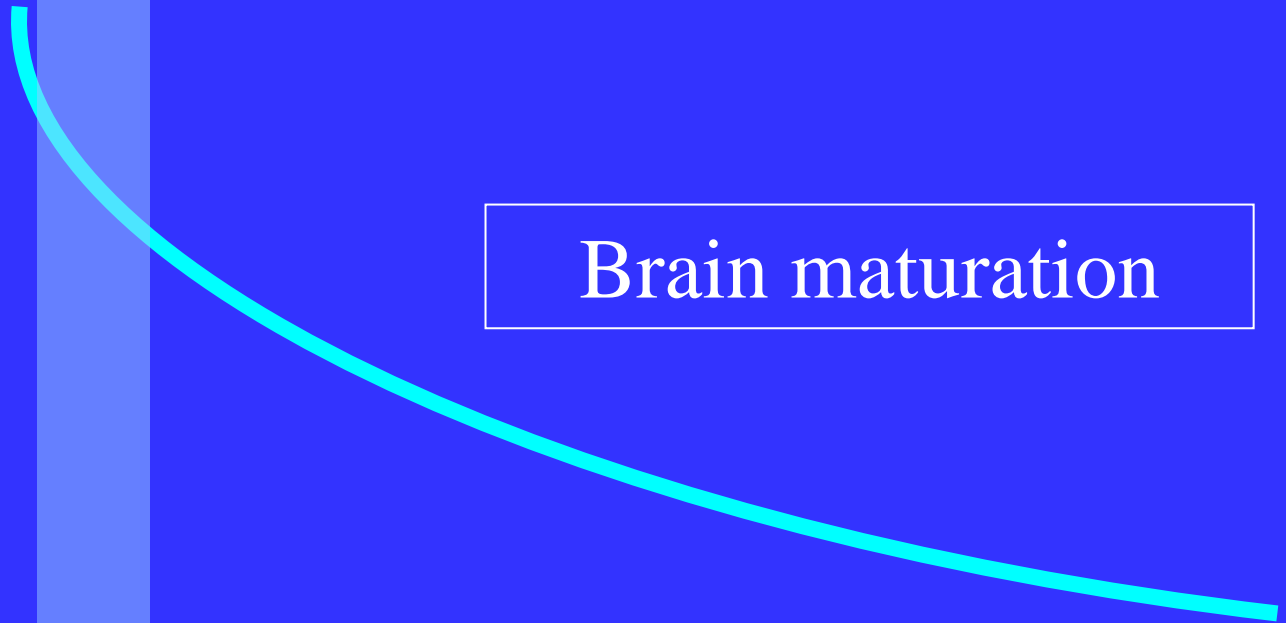
Pubertal risks

Brain maturation

Early puberty

Pubertal risks

Brain maturation





# Self-harm in early adolescence

	Adjusted for age & school grade	Adjusted for 'adult' risks
<b>Pubertal stage</b>		
Pre/Early (n= 395)	1.0	1.0
Mid (n=1239)	2.1 (0.7, 6.3)	1.3 (0.5, 3.6)
Late/Completed (n=1893)	4.3 (1.3, 14)	1.9 (0.6, 5.6)

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The diagram features a central horizontal white arrow pointing to the right, representing the progression of time. A thick red curve starts at the left end of the arrow and arches upwards, ending at the top right. A thick blue curve starts below the arrow and arches downwards, ending at the bottom right. Three white rectangular boxes with black borders contain text: 'Fast track youth' is positioned in the upper right area, 'Pubertal risks' is in the upper left area, and 'Brain maturation' is in the lower right area.

Fast track youth

Pubertal risks

Brain maturation

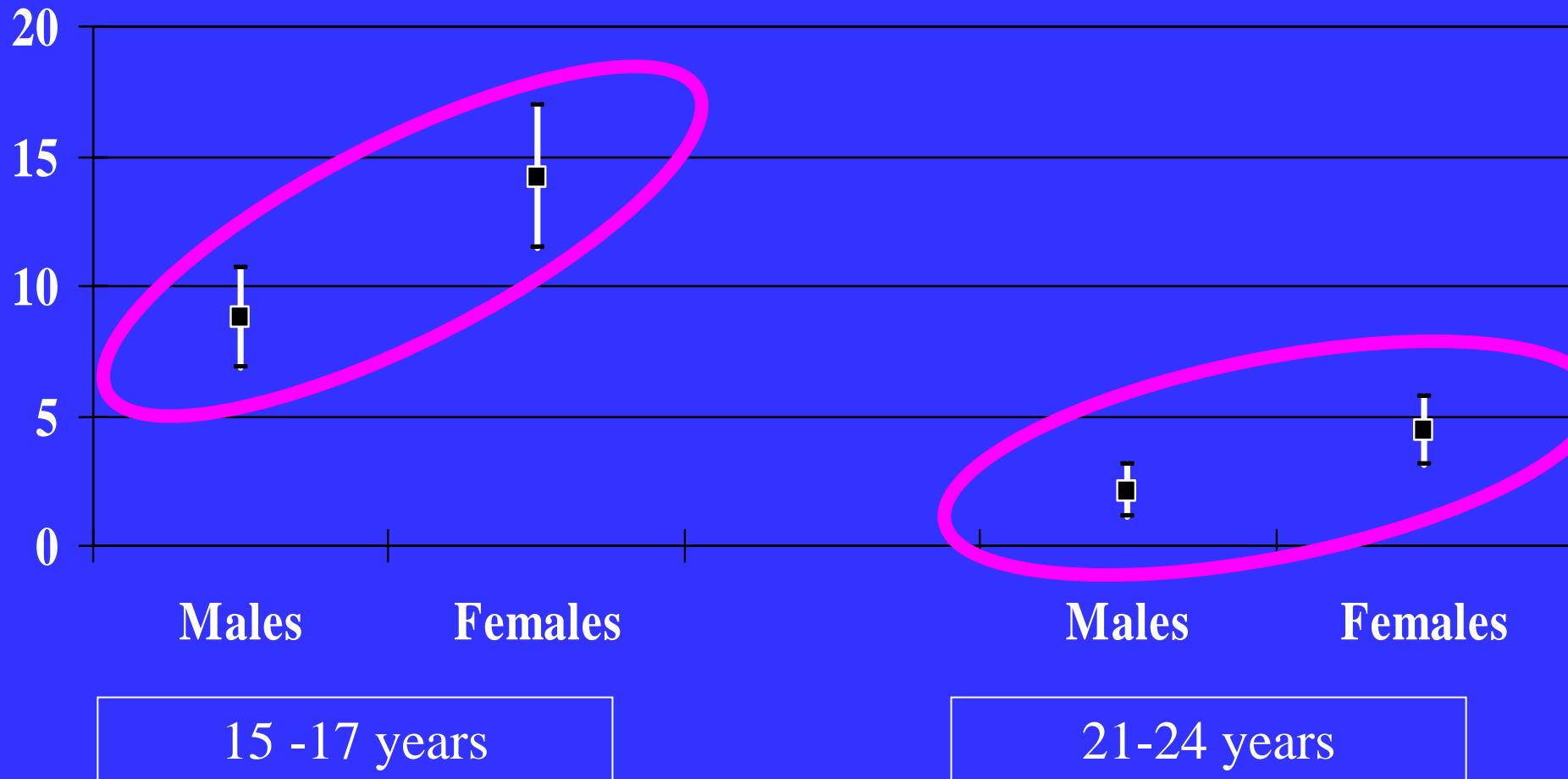
Fast track youth

The diagram features a central horizontal white arrow pointing to the right, representing the progression of time. Above the arrow, a thick red curved line starts on the left and arches towards the right. Below the arrow, a thick blue curved line starts on the left and curves downwards towards the right. Three white rectangular boxes with black borders contain text: 'Pubertal risks' is positioned between the red and blue curves on the left; 'Fast track youth' is in a box above the arrow on the right; and 'Brain maturation' is in a box below the arrow on the right.

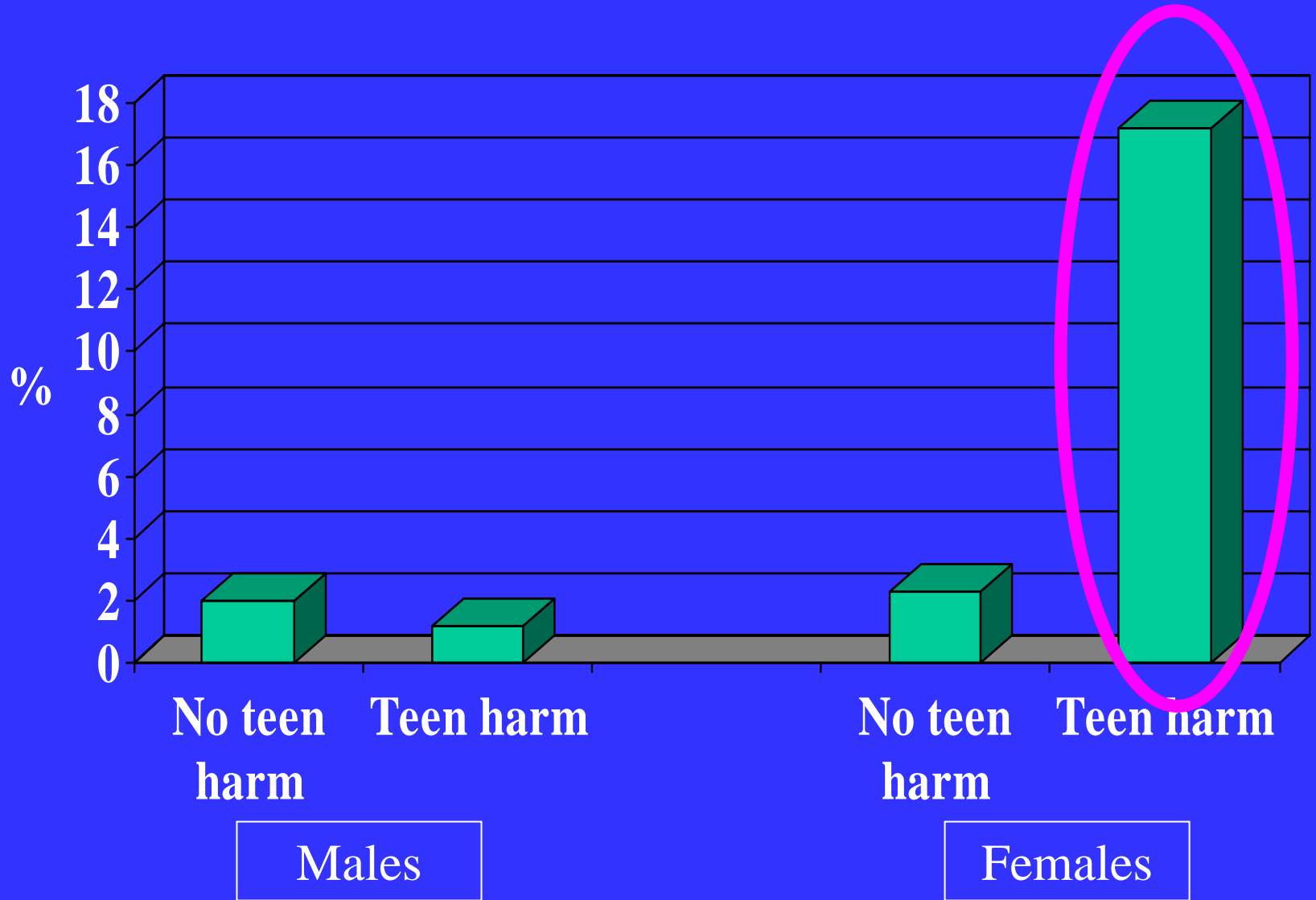
Pubertal risks

Brain maturation

# Prevalence of self-harm in adolescence and young adulthood



# Report of young adult self-harm by teen harm



## What predicts continuing?

- Females 8x
- Sexual abuse 3x
- Psychiatric morbidity 3x

# C Prevention

Universal

Selective

# Universal community-based strategies

## *Target*

**Population**

**Individual**

## *Examples*

- Restricting means
- Reducing lethality

- Screening
- Suicide education

## *Requirements*

- Big enough risks
- Understanding risk processes

- Big enough risk factors

## *Potential problems*

- inclusion of most at risk
- ? harm direct or indirect

- compliance
- ? harm direct or indirect

# Limiting lethal means

Restricting Access



```
graph LR; A[Restricting Access] --> B[Firearms  
Paracetamol, Barbiturates  
Toxic Domestic Gas  
Agricultural Chemicals  
Jumping Barriers];
```

Firearms  
Paracetamol, Barbiturates  
Toxic Domestic Gas  
Agricultural Chemicals  
Jumping Barriers

# Limiting lethal means

Restricting Access

```
graph LR; A[Restricting Access] --> B["Firearms  
Paracetamol, Barbiturates  
Toxic Domestic Gas  
Agricultural Chemicals  
Jumping Barriers"]; C[Reducing Lethality] --> D["Vehicle emissions  
Toxicity of antidepressants  
Pits in train stations  
Availability of N-acetylcysteine"]
```

Firearms  
Paracetamol, Barbiturates  
Toxic Domestic Gas  
~~Agricultural Chemicals~~  
Jumping Barriers

Reducing Lethality

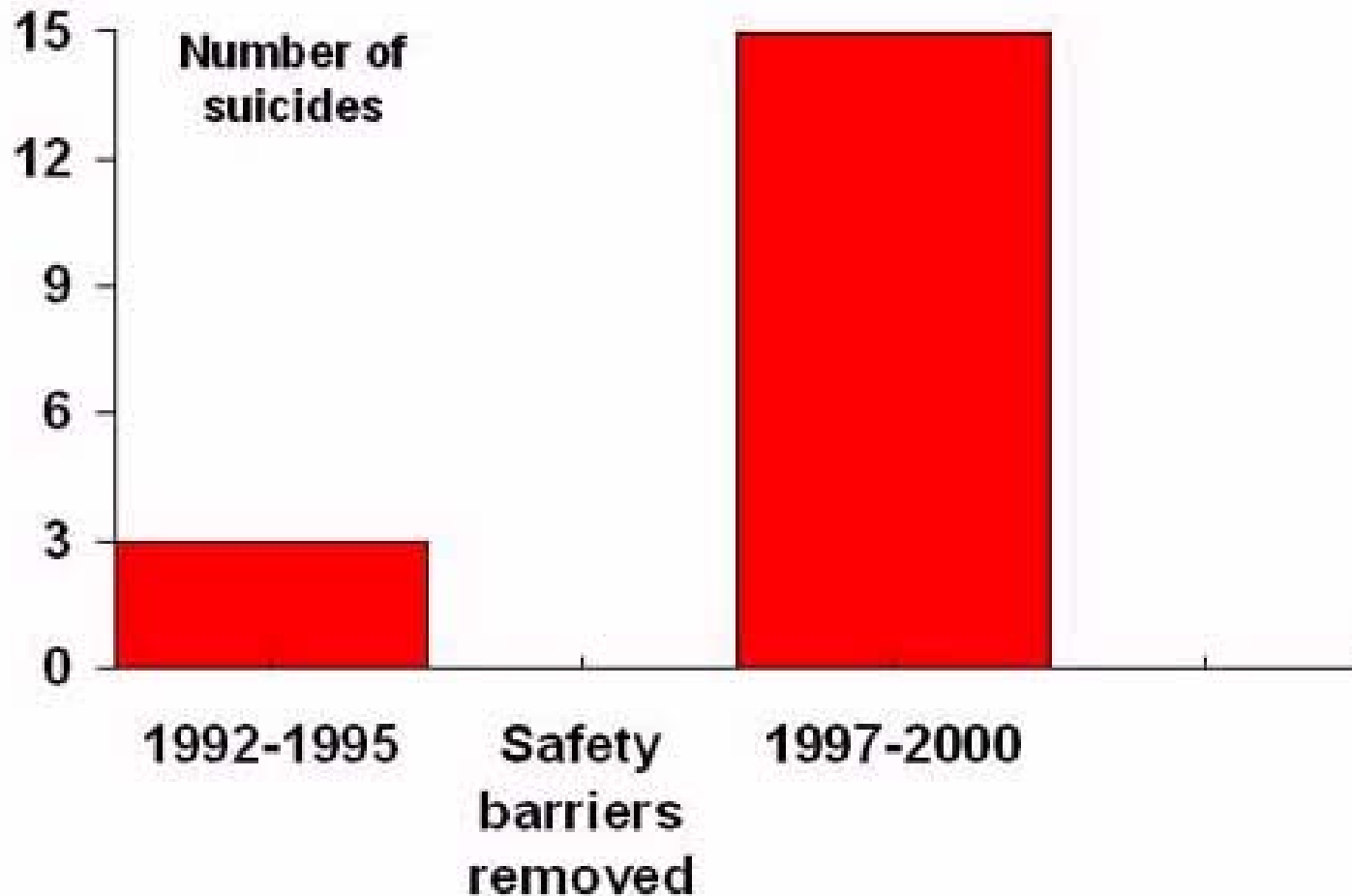
Vehicle emissions  
Toxicity of antidepressants  
Pits in train stations  
Availability of N-acetylcysteine



GRAFTON BRIDGE, AUCKLAND

When opened in April 1930 this splendid structure had the largest concrete arch span (97.4 m) in the world. It was designed by H.E. Moore for the Auckland City Council.

# Suicides from Grafton Bridge before/after removal of safety barriers



Annette Beautrais



Scope for further regulation  
of media?

# Selective community-based prevention

## *Target*

## *Examples*

## *Requirements*

## *Potential problems*

### **Vulnerability centred**

- Family history
- Offenders
- Indigenous

- Capacity to promote resilience

- Reversibility
- Stigma
- ? Harm

### **Event centred**

- Adverse life events

- Capacity to debrief
- identifying event
- Common enough

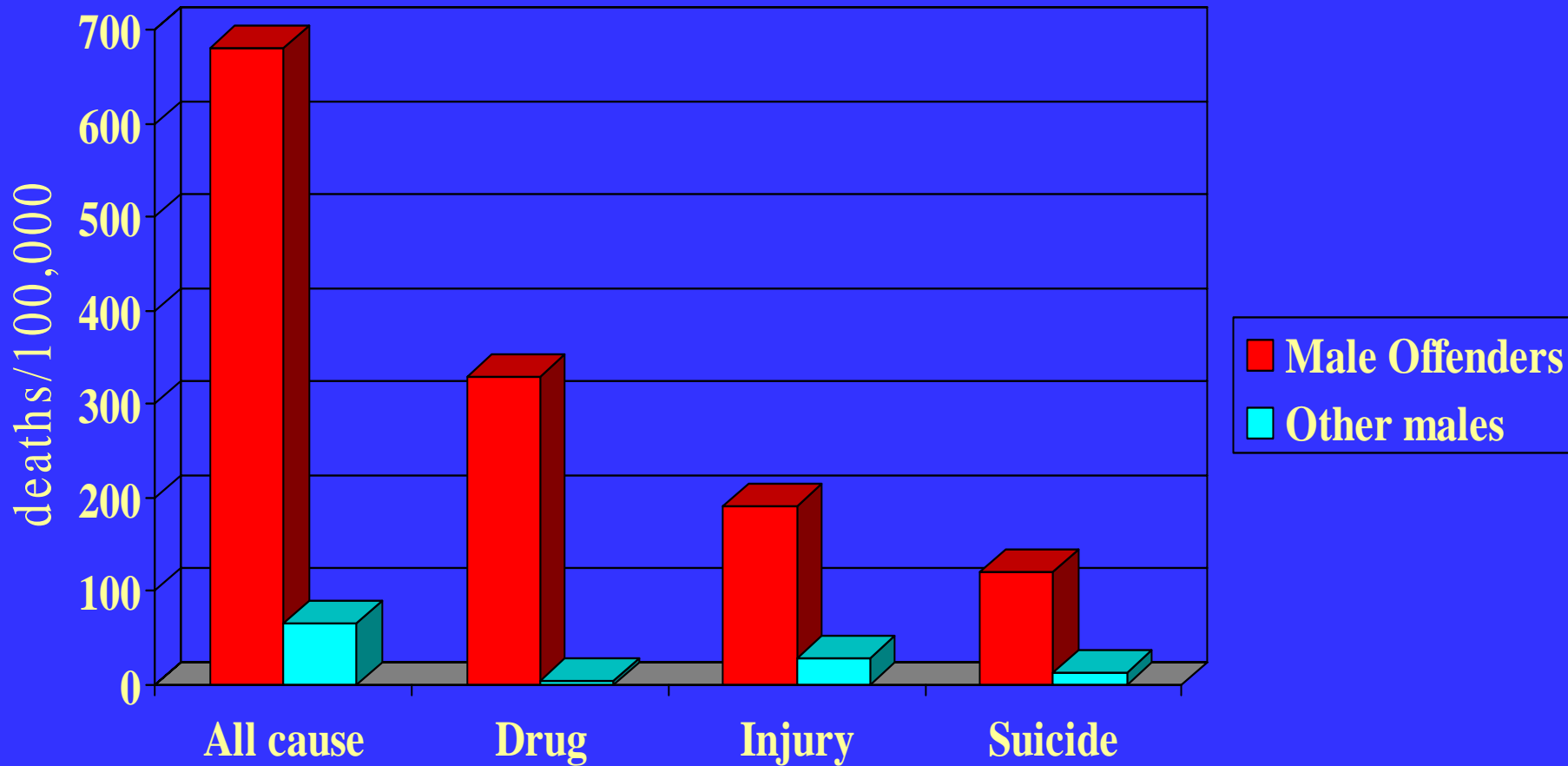
- Stigma
- ? Harm

# Selective prevention: Who is at high risk?

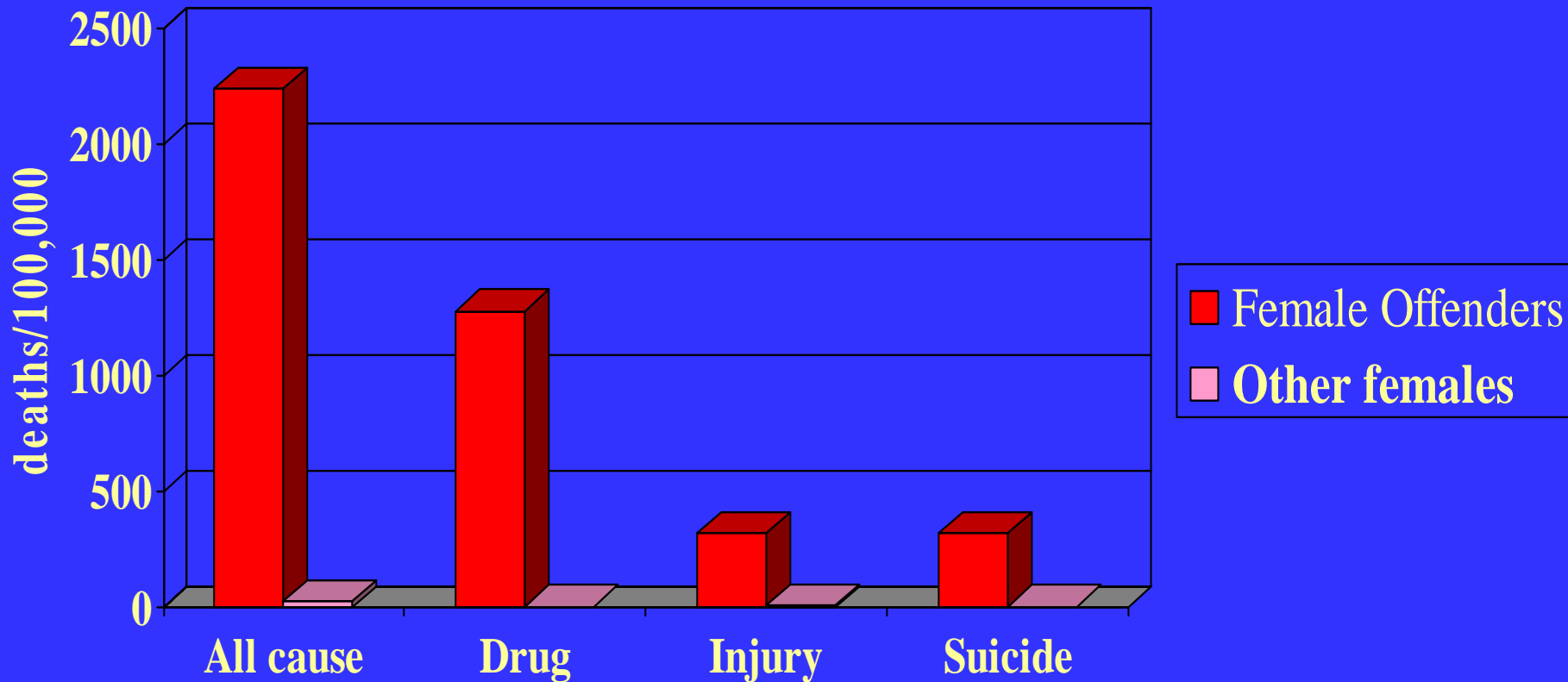
- Marginalised youth
  - indigenous youth
  - young offenders
  - young mentally ill
  - same sex attracted youth
  - ethnic minority youth? (eg Arabic speaking)
- Family history of suicidal behaviour



# Death rates in male offenders aged 15-19 years



# Death rates in female offenders aged 15-19 years



# D Clinical Responses

- 1 Assessment
- 2 Treatment options
- 3 Pharmacological

# 1 Assessment

- Suicide intent
- Social problems/ resources
- Concurrent psychiatric disorder
- Attitudes to help

# 2 Treatment options

## *Strategy*

## *Examples*

## *Requirements*

## *Problems*

### *Indicated*

- Depressive symptom
- Screening

- Psychological

- Clinical resources
- Effectiveness
- Compliance

- Sustainability
- Cases identifiable
- Labelling
- Certification of health

### *Treatment*

- Psychological
- Antidepressants

- Accessibility
- Clinical resources
- Effectiveness

- adverse effects
- level of non-response

### *Maintenance - prevention of relapse*

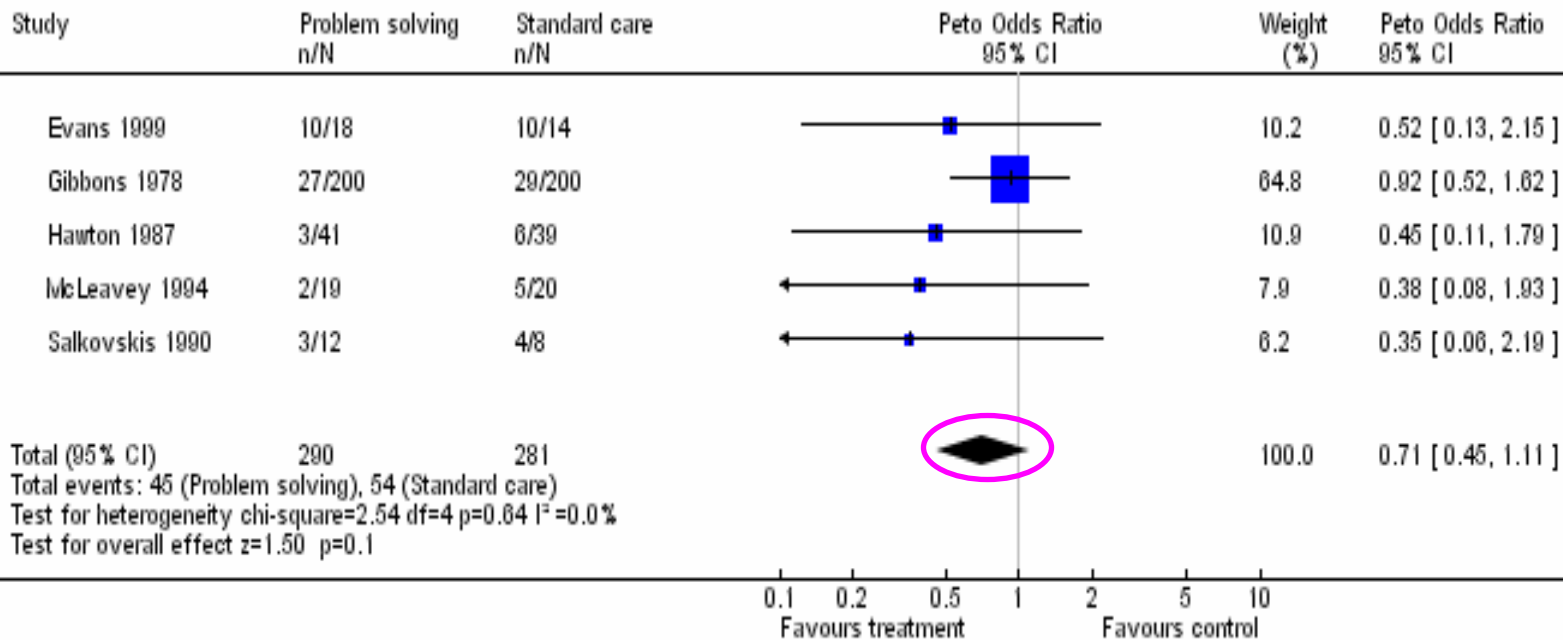
- Psychological

- Clinical resources
- Compliance

- Effect on disability
- Complications?

# Problem solving not shown effective

Review: Psychosocial and pharmacological treatments for deliberate self harm  
Comparison: 01 Problem solving therapy vs Standard aftercare  
Outcome: 01 Repetition

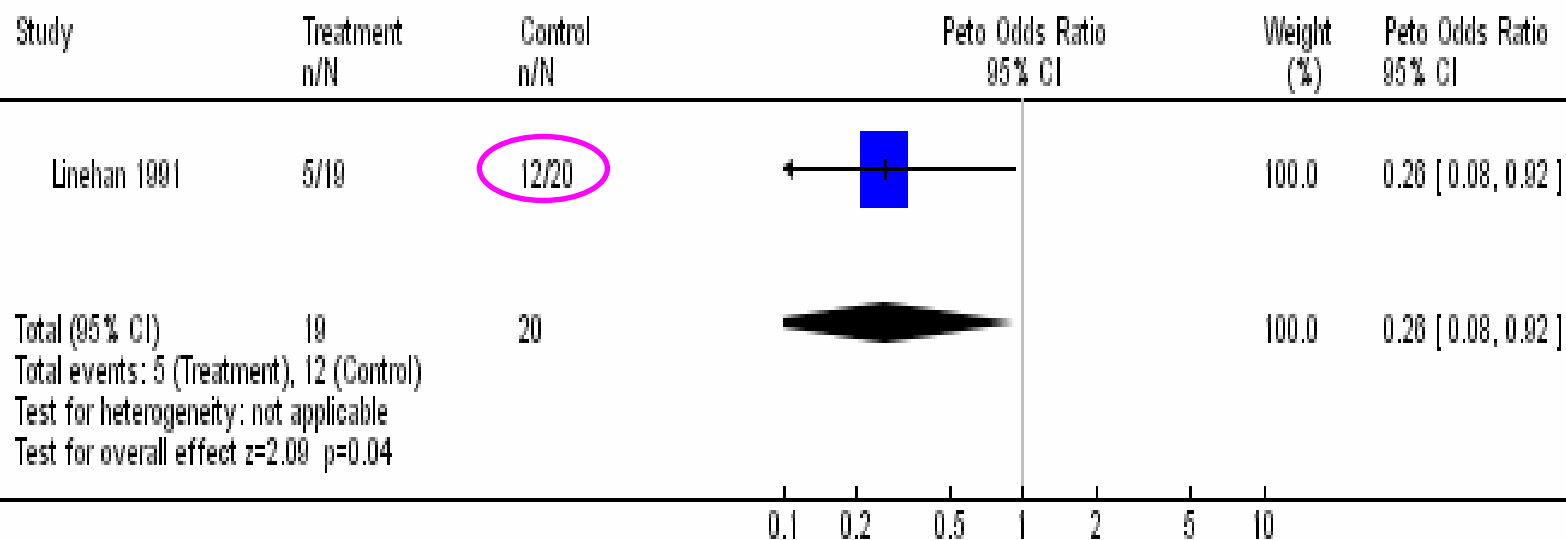


# Dialectical behavior therapy effective in one trial

Review: Psychosocial and pharmacological treatments for deliberate self harm

Comparison: 04 Dialectical behavior therapy vs. Standard aftercare

Outcome: 01 Repetition



# 2 Treatment options

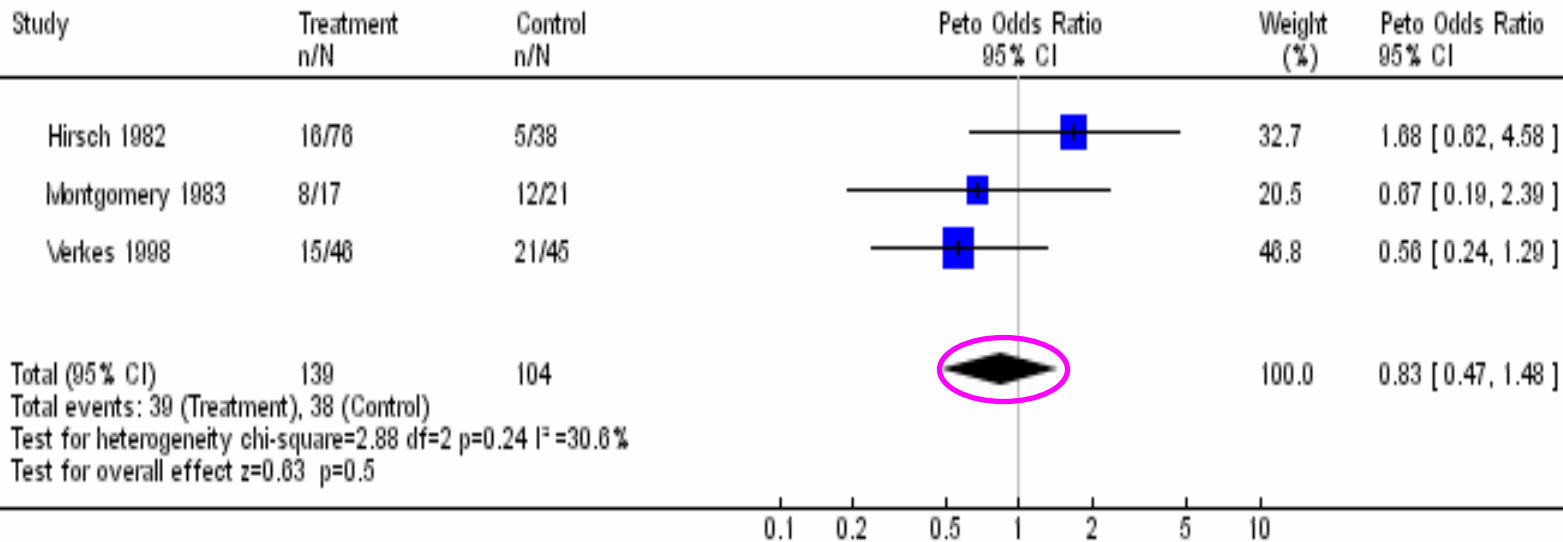
<i>Strategy</i>	<i>Examples</i>	<i>Requirements</i>	<i>Problems</i>
<b><i>Indicated</i></b> <ul style="list-style-type: none"><li>• Depressive symptom</li><li>• Screening</li></ul>	<ul style="list-style-type: none"><li>• Psychological</li></ul>	<ul style="list-style-type: none"><li>• Clinical resources</li><li>• Effectiveness</li><li>• Compliance</li></ul>	<ul style="list-style-type: none"><li>• Sustainability</li><li>• Cases identifiable</li><li>• Labelling</li><li>• Certification of health</li></ul>
<b><i>Treatment</i></b>	<ul style="list-style-type: none"><li>• Psychological</li><li>• Antidepressants</li></ul>	<ul style="list-style-type: none"><li>• Accessibility</li><li>• Clinical resources</li><li>• Effectiveness</li></ul>	<ul style="list-style-type: none"><li>• adverse effects</li><li>• level of non-response</li></ul>
<b><i>Maintenance - prevention of relapse</i></b>	<ul style="list-style-type: none"><li>• Psychological</li></ul>	<ul style="list-style-type: none"><li>• Clinical resources</li><li>• Compliance</li></ul>	<ul style="list-style-type: none"><li>• Effect on disability</li><li>• Complications?</li></ul>

# 3 Pharmacological

No pharmacological intervention  
shown effective.....

# Antidepressants not effective for DSH alone

Review: Psychosocial and pharmacological treatments for deliberate self harm  
Comparison: 00 Antidepressants vs. Placebo  
Outcome: 01 Repetition



# 3 Antidepressants

If clear depression is present

but

Close monitoring

# Scope for intervention

Promoting positive development

Family and school engagement

Reducing 'adult'  
risks

1st clinical  
engagement

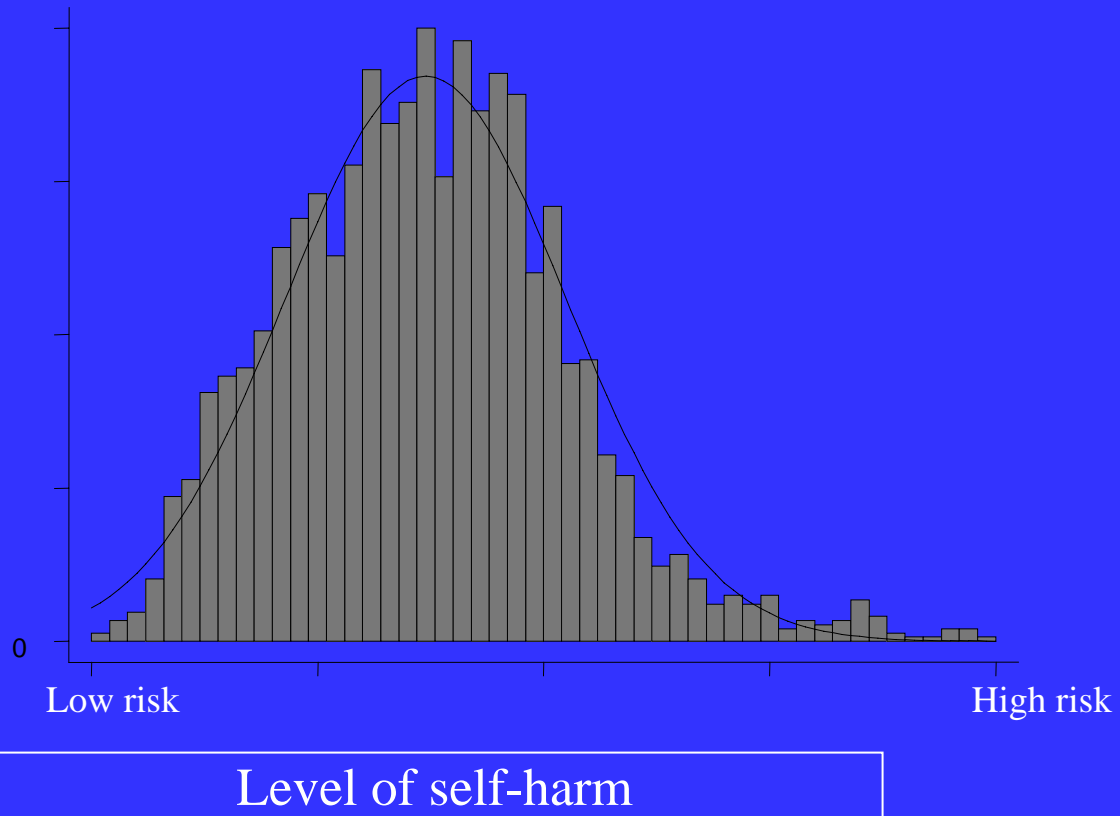
Specialised  
treatments for  
repeaters

Birth

10

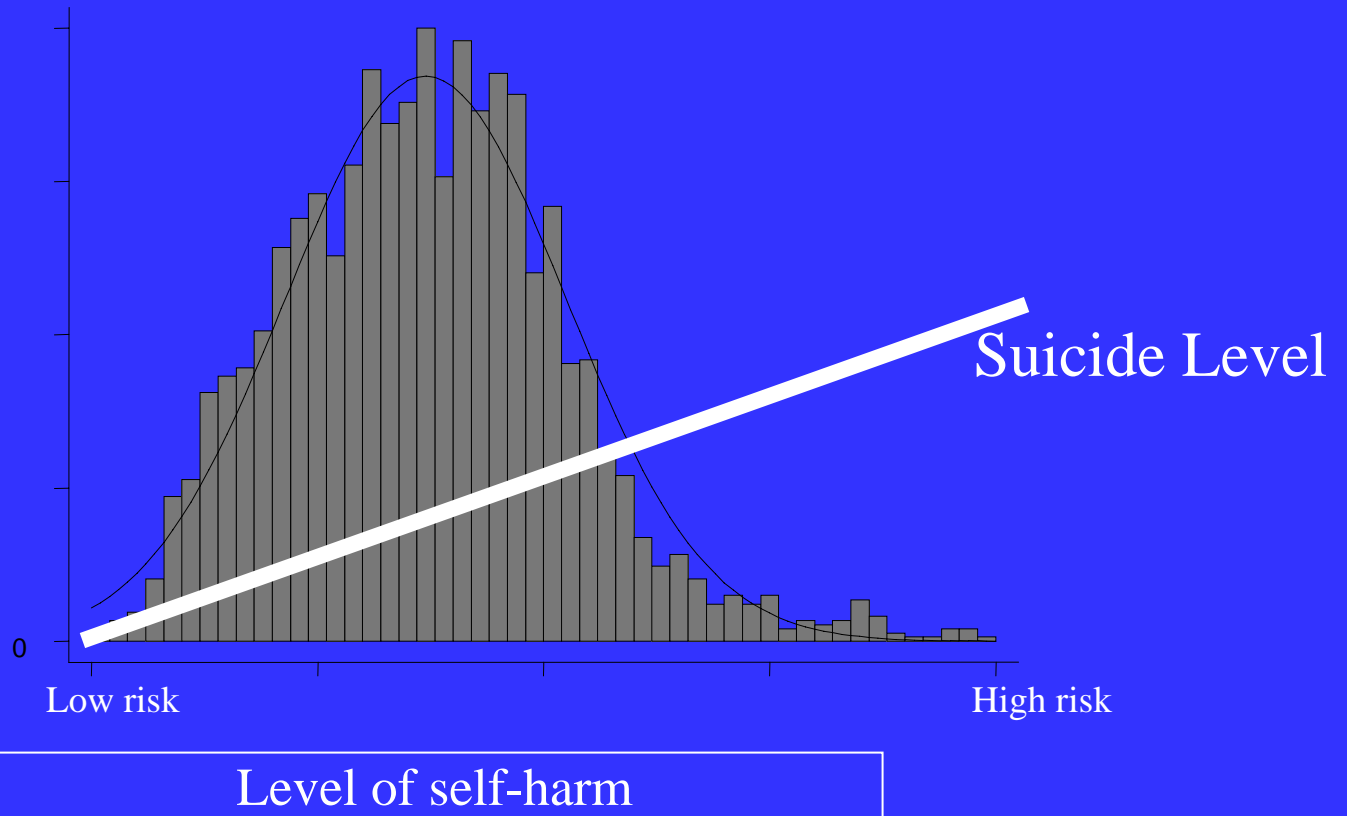
20

Number of young people



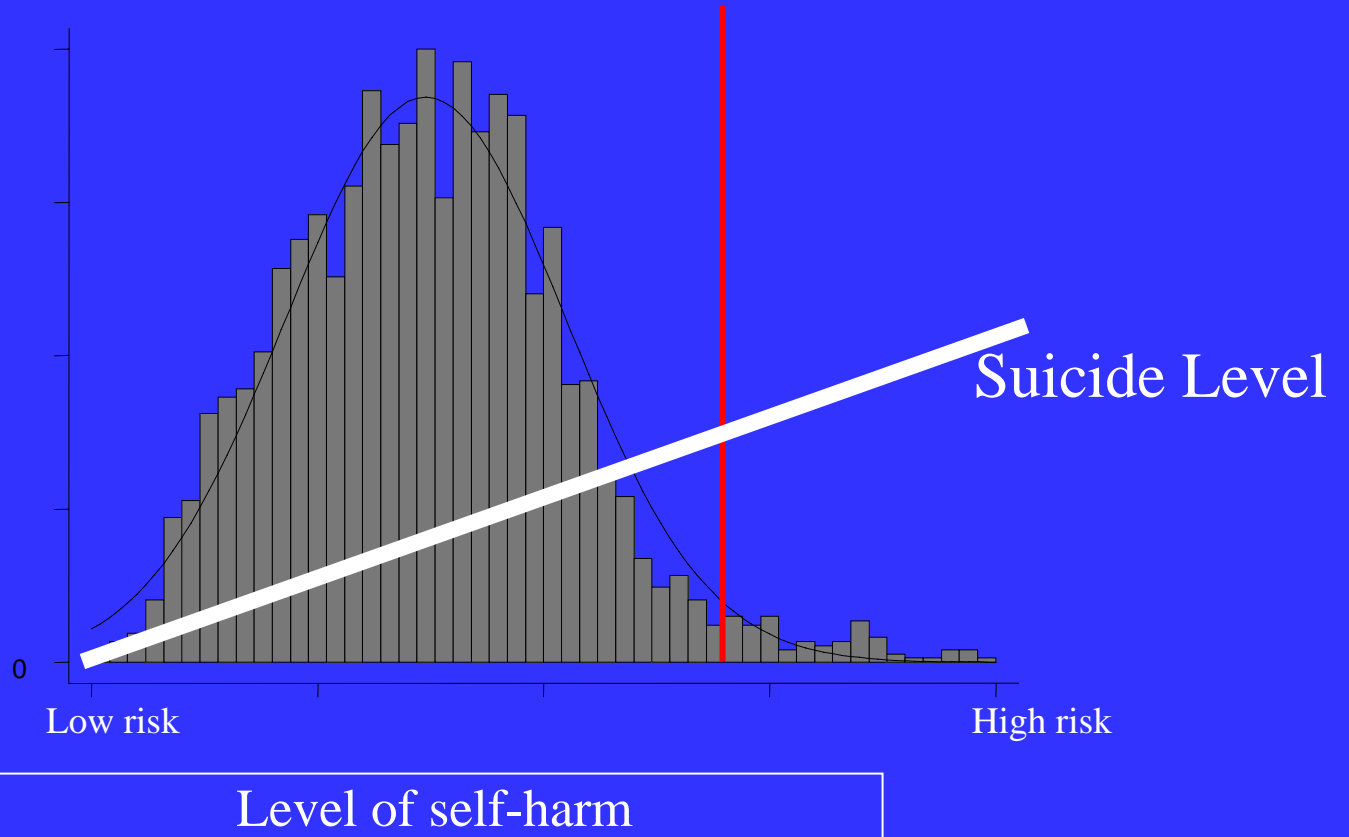
From Geoffrey Rose

Number of young people



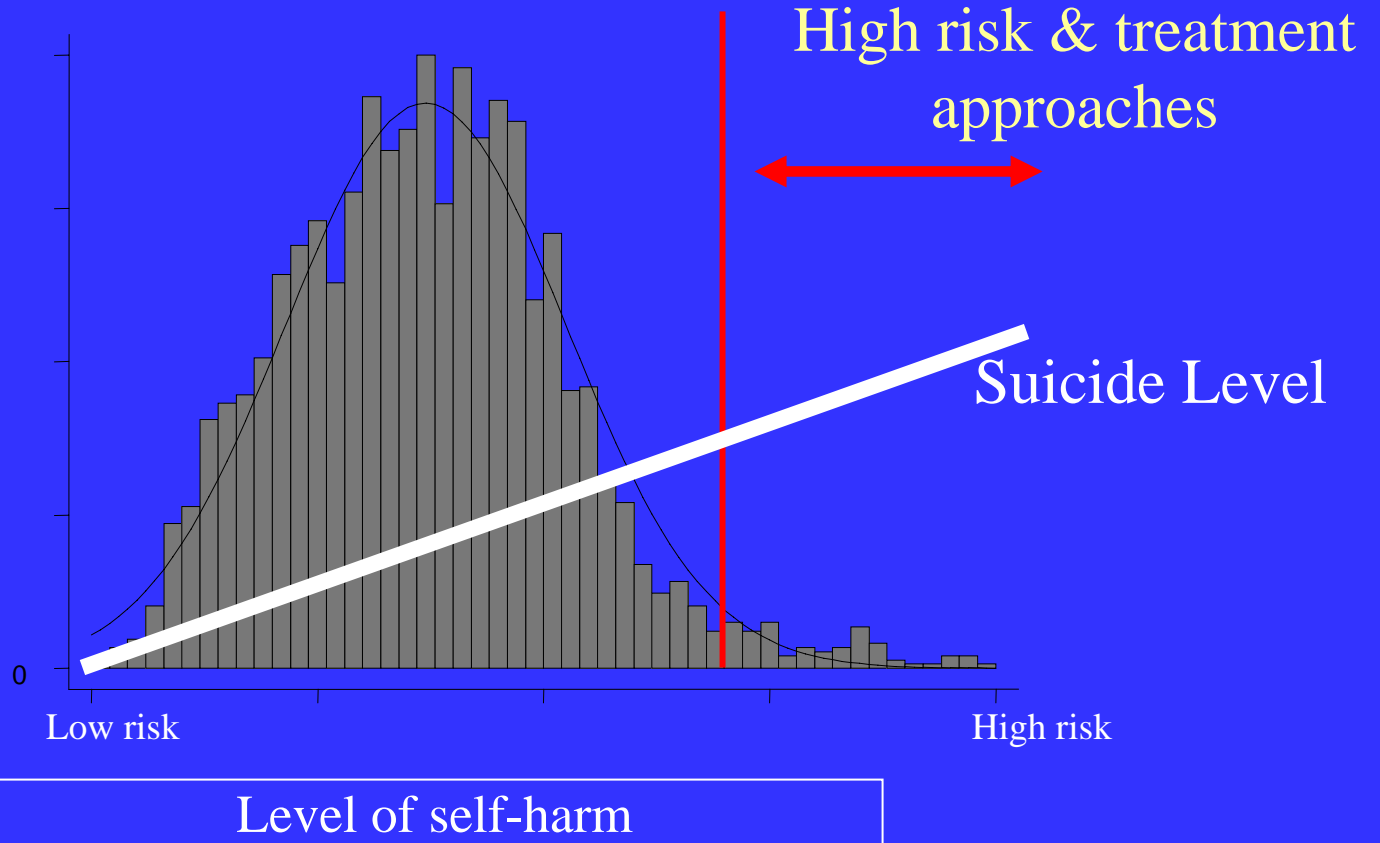
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Number of young people

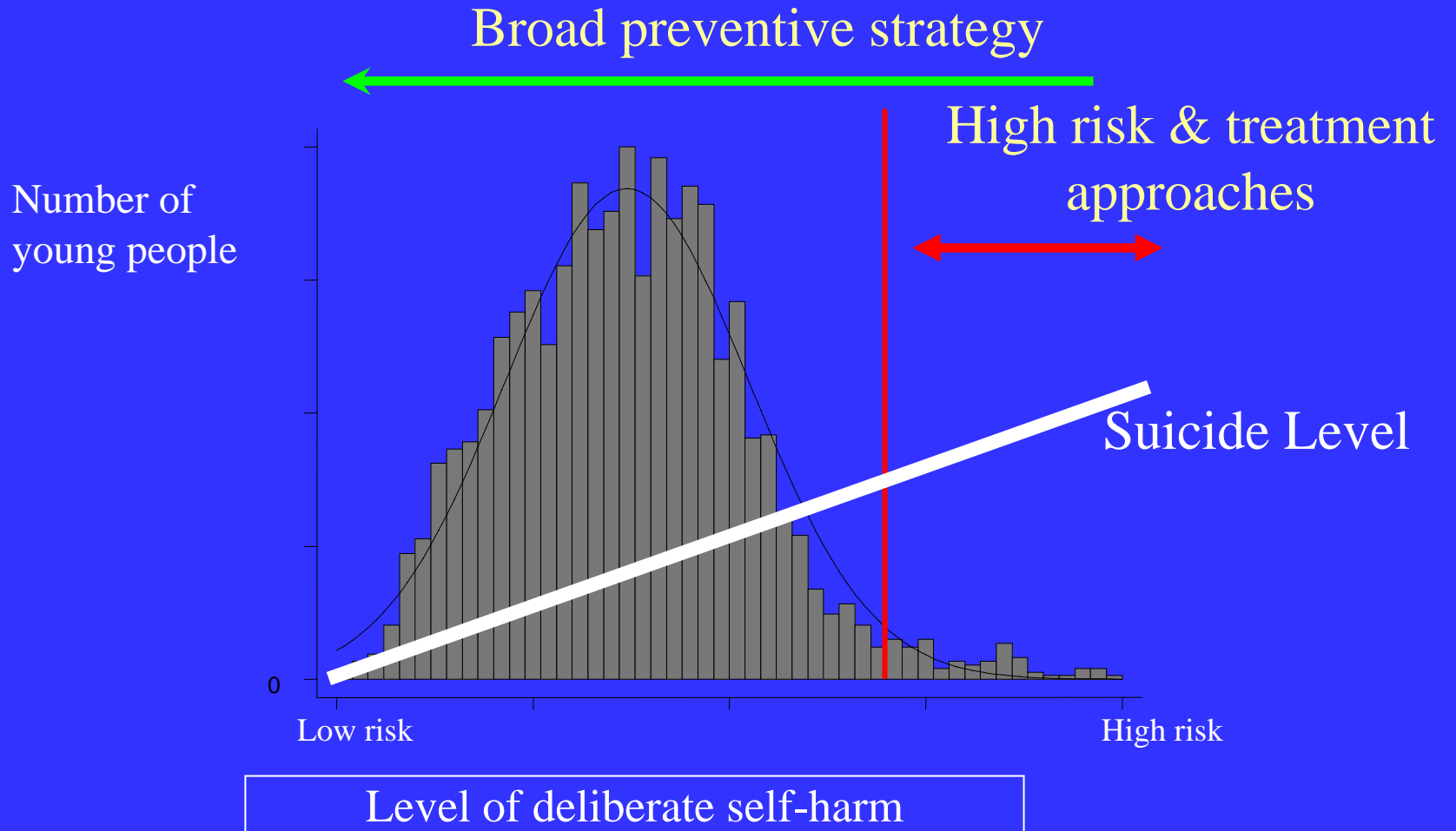


From Geoffrey Rose

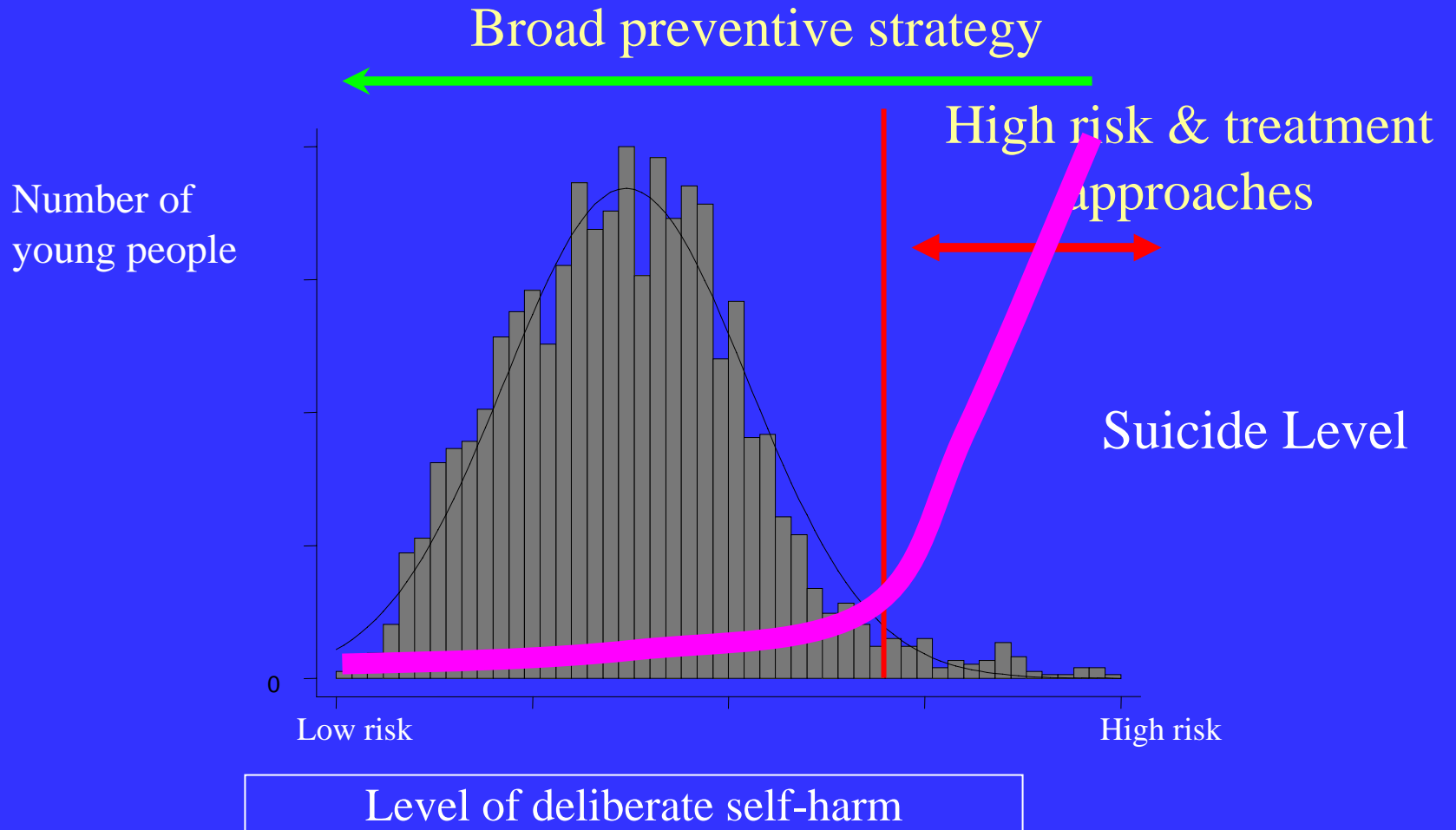
Number of young people



From Geoffrey Rose



From Geoffrey Rose



From Geoffrey Rose

# Continuum theory

- 50% of young suicides self-harm
- Self-harm and suicide correlate

# Continuum theory

- 50% of young suicides self-harm
- Self-harm and suicide correlate
- Most do not suicide
- Most are not suicidal
- changing age relationship

WHO MATURES OUT AND  
WHO DOES NOT?