WHY VACCINATE?
Prof Andreas Suhrbier
Queensland Institute of Medical Research
Vaccines give your immune system the intell about the bad guys. Immune system wins (you live)

Your immune system remembers the intell
Many of these also caused by infectious disease eg. Cervical cancer
Crowded cities help diseases spread.
Air travel now allows disease to be spread globally and quickly. SARS spread to 30 countries in a few months: 8,000 cases, 774 deaths.
SMALL POX OUTBREAK!

1972 outbreak in Yugoslavia

175 cases, 35 dead.
Infected people travelling all over the country.

THE APPROPRIATE RESPONSE!

- Yugoslavia closed its borders.
- Forced vaccination of 19 million people.
- Forced quarantine of 10,000 people for 2 weeks or more.
Thanks to global vaccination this is the last man to get smallpox.

Figure 4. The last recorded case of endemic smallpox (Ali Maow Maalin, Somalia, October 1977).
Polio virus used to cripple millions thanks to vaccination this disease is nearly gone from the world.
<table>
<thead>
<tr>
<th>VACCINE</th>
<th>SIDE EFFECTS</th>
<th>MAJOR EFFECTS OF DISEASE</th>
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<tbody>
<tr>
<td>DIPHTHERIA</td>
<td>• 1 in 10 inflammation or fever.</td>
<td>1 in 15 die</td>
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<tr>
<td>TETANUS</td>
<td>• Occasionally booster gives swelling for a few days</td>
<td>3 in 100 die</td>
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<tr>
<td>PERTUSSIS</td>
<td>• 1 in 10 discomfort, local inflammation or fever.</td>
<td>1 in 200 &lt;6m die</td>
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<tr>
<td>MEASLES</td>
<td>• 1 in 10 discomfort, local inflammation or fever.</td>
<td>1/15 pneumonia, 1/1000 encephalitis, 4/10,000 brain damage, 1/10,000 die</td>
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<tr>
<td>MUMPS</td>
<td>• 1 in 20 swollen glands stiff neck or joint pains.</td>
<td>1/200 encephalitis, some sterility deafness</td>
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<tr>
<td>RUBELLA</td>
<td>• 1 in 20 rash or fever.</td>
<td>90% of infections during pregnancy result in major birth defects (eg deaf blind heart)</td>
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Wherever you look vaccination has a major impact on disease incidence

Whooping cough notifications and vaccine coverage, England and Wales, 1940-2008 (Health Projection Agency UK)

Vaccination rates drop and whooping cough rates go up.
As MMR vaccine coverage drops, measles cases rise. The graph shows the relationship between MMR vaccine coverage and laboratory-confirmed measles cases (all ages). The Wakefield article and the statistic that 'ONE IN 10 children with measles end up in hospital' highlight the importance of vaccination.
THE LANCET 1998

Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children

A J Wakefield, S H Murch, A Anthony, J Linnell, J M Casson, M Malik, M Berelowitz, A P Dhillon, M A Thomson, P Harvey, A Valentine, S T Davies, J A Walker-Smith

A study of 12 children

9 children claimed to have developed autism within 2 weeks of MMR vaccination
Wakefield has been struck off the medical register

- 4 counts of dishonesty - money, research & statements.
- 9 counts of mistreating developmentally challenged children: causing invasive "high-risk" research to be carried out without ethical approval and against their best clinical interests;
- 3 rulings said that he caused children to undergo lumbar punctures without clinical reason;
- 3 rulings said he had breached his employment contract at the hospital's medical school, which forbade him from involvement in patient care.

General Medical Council; Determination on Serious Professional Misconduct (SPM) and sanction: 2010. Re: Dr Andrew Jeremy WAKEFIELD.
THE DATA WAS MADE UP

- 3 of 9 children reported with regressive autism did not have autism diagnosis at all. Only 1 child clearly had regressive autism.

- All 12 children were NOT "previously normal" as claimed, 5 had pre-existing developmental concerns.

- The period between vaccination and autism published in the paper did not match Hospital records.

- In 9 cases histopathology results were retrospectively changed.

- 3 children were excluded from the study as the clinical history failed to support the hypothesis.
JABS; solicitor Richard Barr pays Wakefield £150 /h plus £50,000 to find a link between vaccination and autism to help in law suits.

Wakefield receives £435,643 to support law suit.

Wakefield patents single shot measles vaccine claiming it to be safer than MMR.

Unigenetics (Wakefield is director) awarded £800,000 by Legal Aid to perform tests

Carmel Healthcare “autistic enterocolitis” diagnostic – predicted revenue £ 28m
Due to litigation Japan stopped MMR use, but autism rates still increased at the same rate as elsewhere.

MMR vaccination rates remained the same but autism still rose

Kaye BMJ 2001. 3,092,742 person years  UK
A study of 537,303 children

Conclusions This study provides strong evidence against the hypothesis that MMR vaccination causes autism. (N Engl J Med 2002;347:1477-82.)

See also NCIRS Fact Sheet, MMR vaccine 2009.
As the parent of an autistic child, I really resent the time and money wasted disproving what was obvious nonsense in the first place! Why can money not be spent helping autistic children learn and develop? We should stick to importing crazy soap opera plot lines from the US not crazy theories about vaccinations.
Autism spectrum disorder
- Autistic disorder
- Asperger’s syndrome
- Childhood disintegrative disorder
- Rett syndrome
- Pervasive Developmental Disorder not Otherwise Specified.

The number of children diagnosed with autism has increased dramatically since 1975.

There is a strong genetic component in autism. 5-10 genes, possibly more involved.

ncbi; 571 scientific peer reviewed publications for autism & vaccines (vast majority do not show a link)

ncbi; 18,872 papers on autism

1 paper does not represent the truth
Childhood immunisation

Charity Gifts for disease protection
We have vaccine products for snake bites.

Please leave snakes alone. You hassle them they bite you. Most people who die tried to kill the snake.
We have vaccines against house dust mite allergy
We desperately need a vaccine for HIV

Adults and children estimated to be living with HIV as of end 2005

- **North America**: 1.2 million (650,000 – 1.8 million)
- **Caribbean**: 300,000 (200,000 – 510,000)
- **North Africa & Middle East**: 510,000 (230,000 – 1.4 million)
- **Latin America**: 1.8 million (1.4 – 2.4 million)
- **Western & Central Europe**: 720,000 (570,000 – 890,000)
- **Eastern Europe & Central Asia**: 1.6 million (990,000 – 2.3 million)
- **East Asia**: 870,000 (440,000 – 1.4 million)
- **Sub-Saharan Africa**: 25.8 million (23.8 – 28.9 million)
- **South & South-East Asia**: 7.4 million (4.5 – 11.0 million)
- **Oceania**: 74,000 (45,000 – 120,000)

**Total**: 40.3 (36.7 – 45.3) million

UNAIDS
World Health Organization
We desperately need a vaccine for malaria
We hope to be able to make vaccines against cancer