

TRANSLATIONAL RESEARCH IN NEONATOLOGY: FOR A BETTER EDUCATION & A BETTER CARE



Olivier BAUD, MD-PhD

**Soins intensifs Pédiatriques, Division de Néonatalogie
Hôpitaux Universitaires de Genève
Translational Research Lab, Université de Genève
Inserm U1141, Hôpital Robert Debré, Paris**

Translational research:

A concept including improved medicine



« Never before have scientists had access to the remarkable tools that are available today and that allow rigorous translational investigations to be conducted. However, the creation of a redefined discipline of translational medicine will require the emergence of a new and vibrant community of dedicated scientists, collaborating to fill knowledge gaps and dissolve or circumvent barriers to improved clinical medicine »

Elias A. Zerhouni, *Founding Chief Scientific Advisor, Science Translational Medicine*

- Revised crosstalk between basic science and clinical impact/improvement
- Community of **researchers** investigating both **preclinical** and **clinical aspects** of a key question and promoting **science-based education of young clinicians**

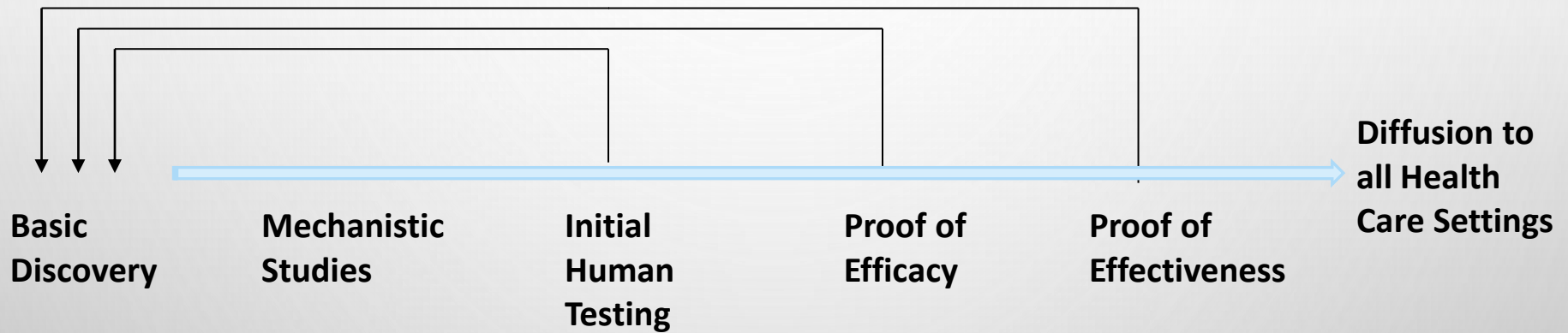


TRANSLATIONAL RESEARCH IN NEONATOLOGY

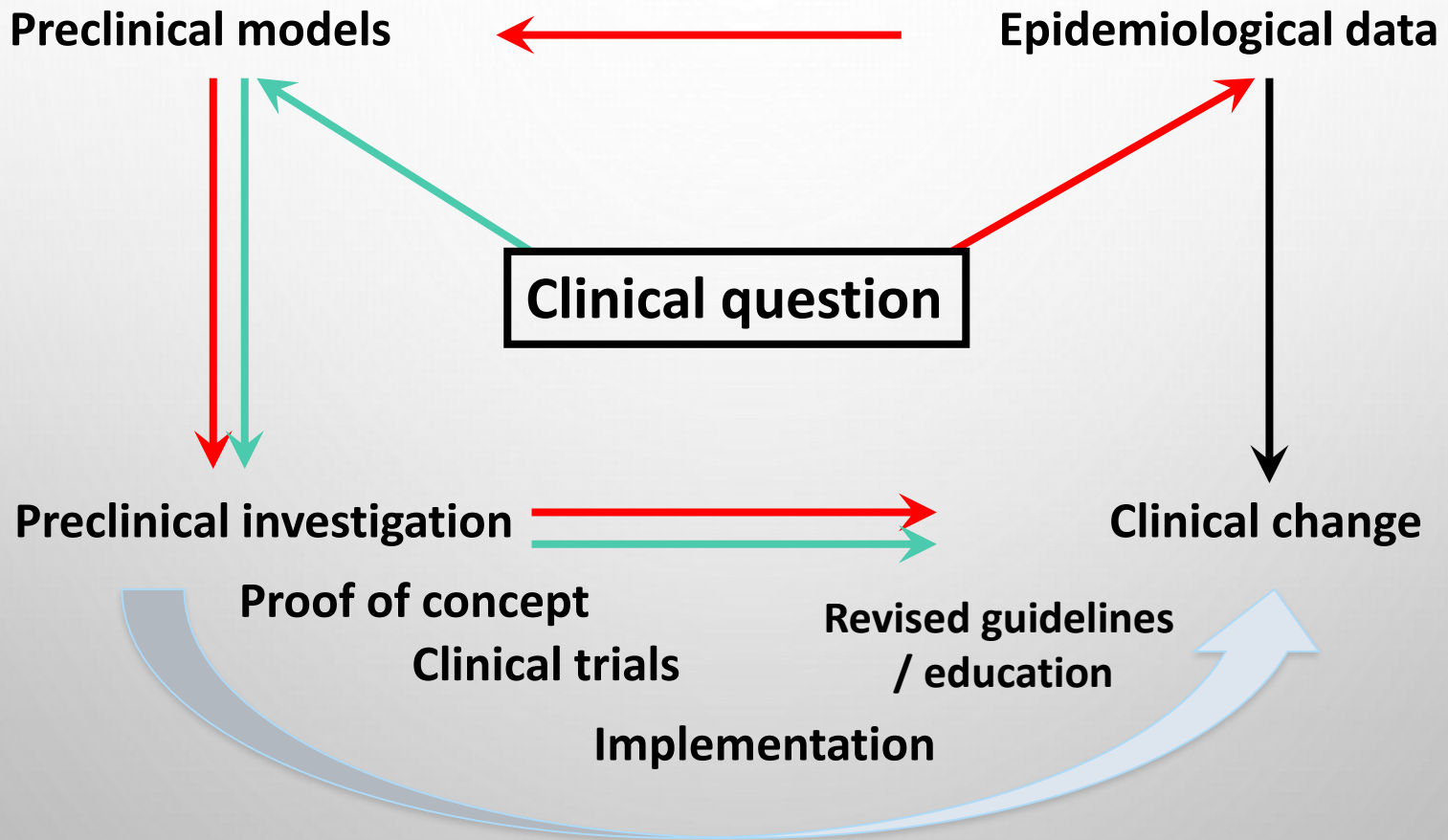
How may (should) students be involved?



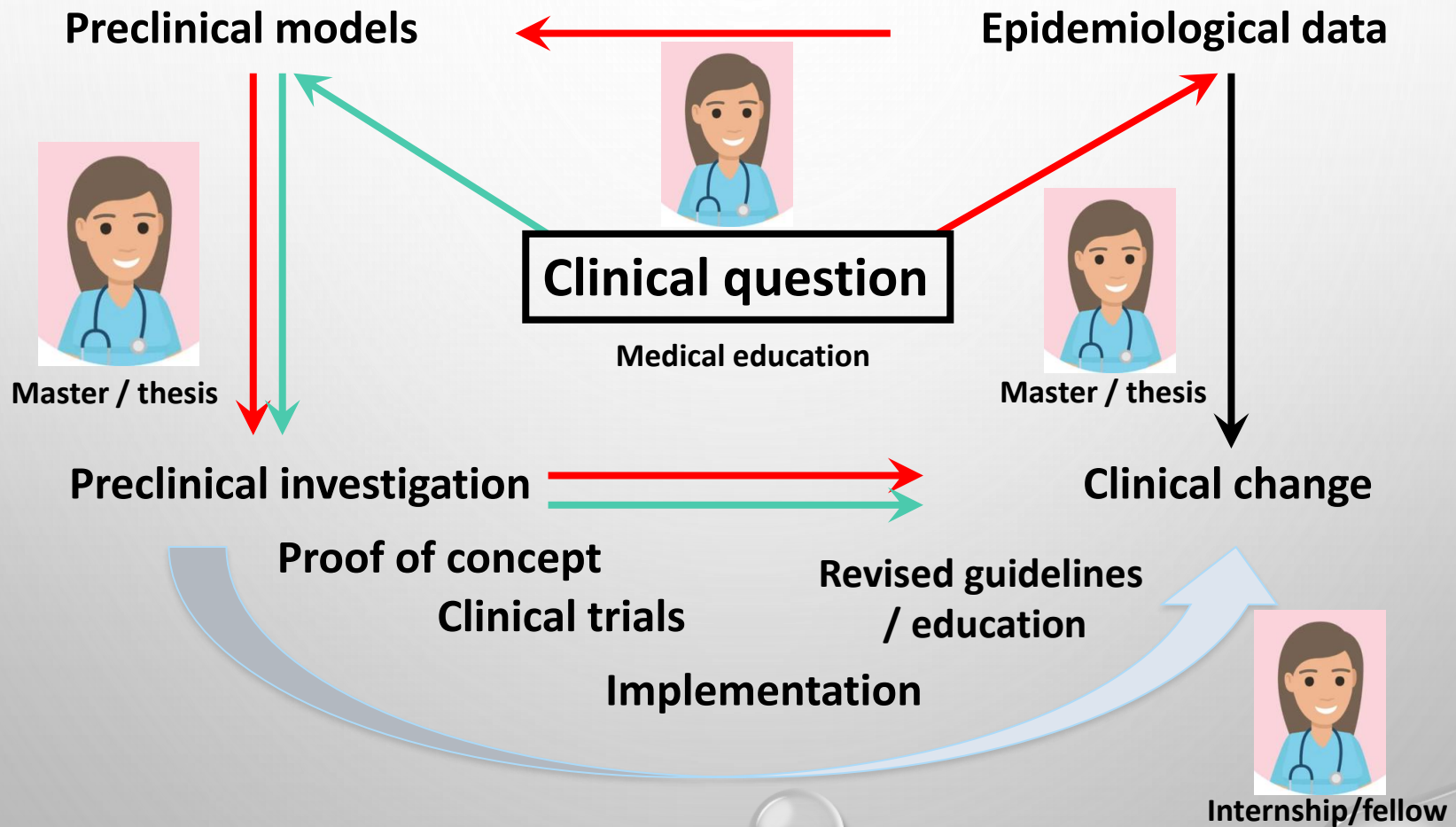
Translational research: from basic to clinics



Translational research: the student



Translational research: the student





TRANSLATIONAL RESEARCH IN NEONATOLOGY

Examples of crosstalk between
preclinical and clinical aspects of key questions



BPD, NO and neuroprotection



New BPD features



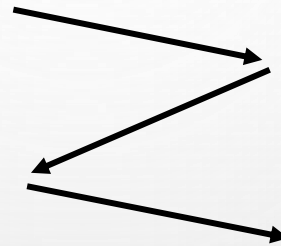
**BPD definition revised
(inflammation/angiogenesis)**



BPD pathogenesis revised



NO pathway relevant in rodents



BPD, NO and neuroprotection



New BPD features



**BPD definition revised
(inflammation/angiogenesis)**

**RCTs: no substantial effect
of iNO on BPD
... but improved neurological
outcome**

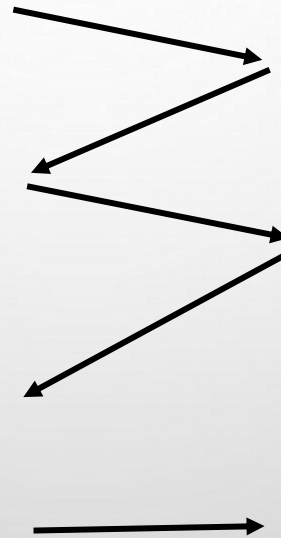


BPD pathogenesis revised



NO pathway relevant in rodents

iNO: a drug targeting the brain?!



BPD, NO and neuroprotection



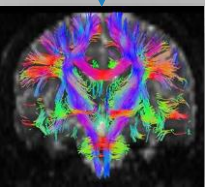
New BPD features



**BPD definition revised
(inflammation/angiogenesis)**

**RCTs: no substantial effect
on BPD
... but improved neurological
outcome**

**Ongoing or planned RCTs
on neuroprotection**



BPD pathogenesis revised

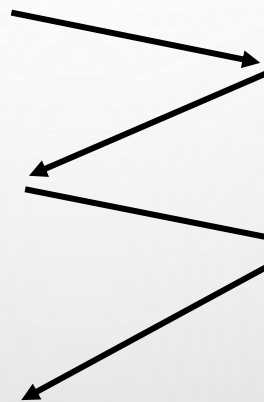


NO pathway relevant in rodents

iNO: a drug targeting the brain?!



Neuroprotective effect

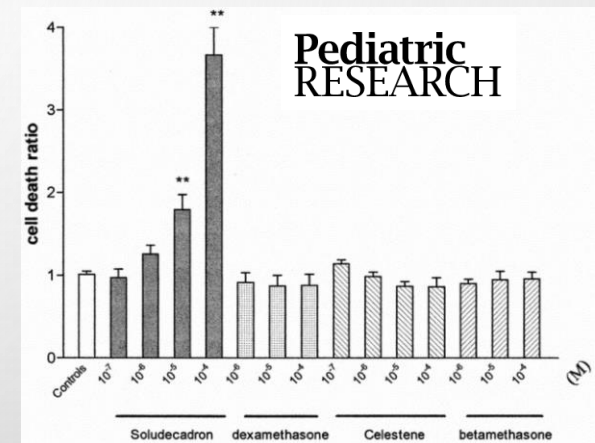


Other translational studies in neonatology: when bench meets clinical care

- Antenatal steroids: Beta vs Dexa

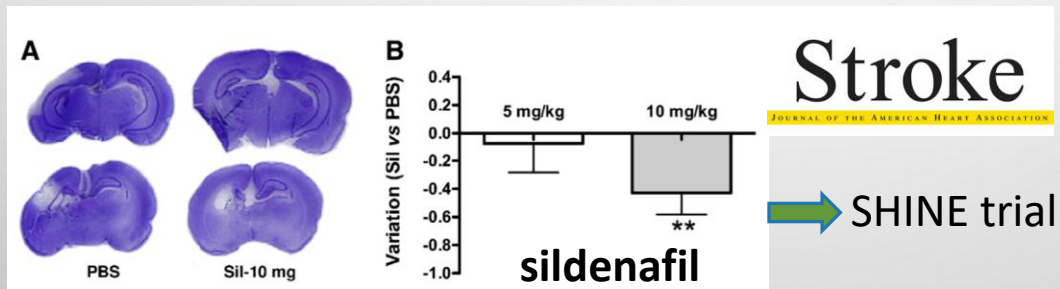


The NEW ENGLAND
JOURNAL of MEDICINE



Other translational studies in neonatology: when bench meets clinical care

- Antenatal steroids: Beta vs Dexamethasone
- HIE: hypothermia + neuroprotective drugs

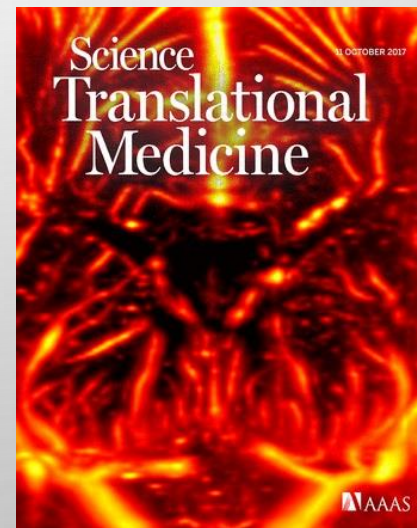
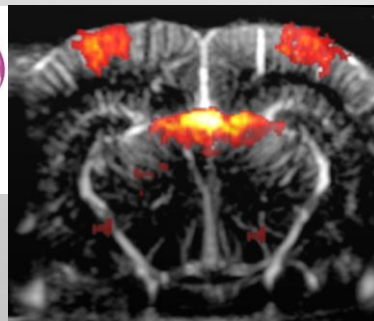


Other translational studies in neonatology: when bench meets clinical care

- Antenatal steroids: Beta vs Dexamethasone
- HIE: hypothermia + neuroprotective drugs
- **Ultrafast Doppler in rodents and human neonates to assess intrinsic connectivity**



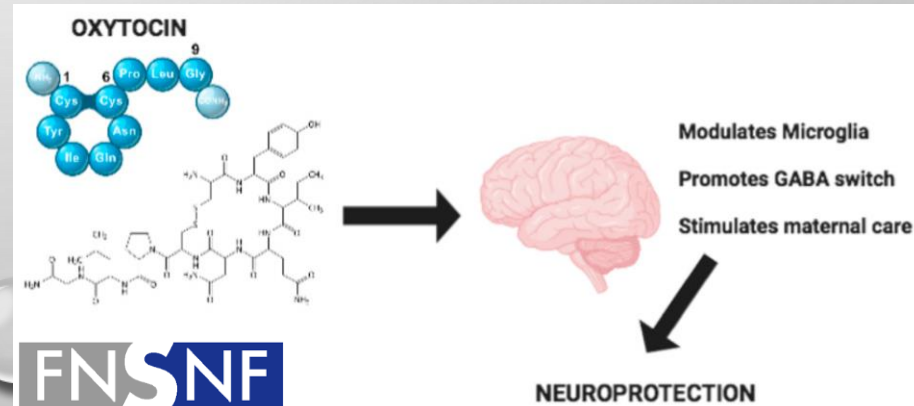
rat



neonate

Other translational studies in neonatology: when bench meets clinical care

- Antenatal steroids: Beta vs Dexa
- HIE: hypothermia + neuroprotective drugs
- Ultrafast Doppler in rodents and human neonates to assess intrinsic connectivity
- **Neurobiological basis of developmental care**



Thank you!

