Revolutionising disease understanding for a healthier Europe

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HORIZON 2020:
Now is the time to step up & accelerate research

Vitally important to sustain health research in Horizon 2020

Shift towards preventative medicine
Need to uncover mechanisms of disease at molecular level
Need to embrace personalized medicine
Need to translate research into innovations for improved health & quality of life
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Need strategic coordination amongst disease areas

Chronic diseases occur together, particularly in the elderly
Shared common molecular/cellular mechanisms across disease areas
To bridge biological knowledge into clinical progress will require a new generation of resources & support systems
Challenges facing clinical research

• Medical disciplines have traditionally worked independently of each other.
  ➢ Need to improve cross-talk & networking between different disease areas in basic research

• Entire scientific community must have opportunities to share common tools & infrastructural resources e.g. bioinformatics, systems biology, the ‘-omic’ platforms
  ➢ Need to embrace these resources to bridge the gap between clinical studies & basic science.
Common chronic diseases often share similar underlying basic cellular & molecular mechanisms.
Need to link up basic science discoveries to clinical research

- Mechanisms explored in one disease area are relevant to other diseases

- Enormous synergy to be gained by bringing the different clinical disciplines together

LUNGS, SMOKING AND LONGEVITY

Adapted from Rennard and Vesbo Proc Am Thorac Soc, 15, 2008, 5: 878-883
Chronic Obstructive Pulmonary Disease (COPD)

1. COPD is characterised by a high prevalence of co-morbidities e.g. heart disease & lung cancer, complicating its management.

2. No effective therapies for COPD to slow its progression, reduce mortality, or to treat exacerbations.

- Understanding co-morbidities requires a multi-disciplinary approach & greater interaction between scientists and physicians in different disciplines.

- Greater investment to link clinical studies & basic science is crucial.
Translational bioinformatics -
A tool for linking biological & clinical knowledge

Study of complex diseases requires a new paradigm for knowledge integration & a deeper understanding of biology.

Clinical progress will depend on development of new approaches to interpret these data.

Strategies for future EU health research agenda:

• Avoid fragmentation
• Sustainable investments in excellence
• Involve all stakeholders
• Build on unique European competence
• Strong science-driven platforms