

Integrating science and medicine in the treatment of chronic disease

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Chronic non-communicable diseases (NCD), such as cardiovascular disease, diabetes, arthritis, chronic respiratory disorders and cancer represent the major global health problem of the 21st century and affect all age groups. The cost of treating these diseases is substantial, and for many countries is an under-appreciated cause of poverty.

In BioMed Central's open access journal *Genome Medicine* an international group of scientists and [medical doctors](#) have proposed an integrated method, using systems medicine, research, and personalized patient centered treatment, to look at chronic disease as a whole.

As chronic NCD are influenced by similar environmental and [lifestyle factors](#) such as nutrition and exposure to pollutants or tobacco, and patients often have several NCDs, the team believes they should be investigated as a group. Even loss in biodiversity, through climate change and industrialization, affects available nutrition and economic expectations.

Prof Jean Bousquet, from Arnaud de Villeneuve Hospital, CHU Montpellier, said, "Integration between results from primary care, research, and public health studies would fine tune computational and mathematical modeling. Increased access to [patient data](#) by health professionals (as long as patient confidentiality could be assured) would feed into this data pool in order to provide a better understanding of disease progression and treatment.

"Many people who suffer from chronic NCD are affected by more than one disease and would benefit from a personalized holistic treatment at the level of primary care. A better understanding of chronic disease through systems medicine would allow a more efficient use of health resources and focus attention on prevention as well as control, so reducing the cost and burden of care to society."

More information: Systems medicine and integrated care to combat chronic noncommunicable diseases, by Jean Bousquet et al., *Genome Medicine* (in press)

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