

## Clinical significance of immune-system laboratory tests

Marco Ruggiero<sup>1</sup>, Stefania Pacini<sup>2</sup>, Tiziana Punzi<sup>2</sup>, Gabriele Morucci<sup>2</sup>, Massimo Gulisano<sup>2</sup> Claus Koehnlein<sup>3</sup>, Henry H. Bauer<sup>4</sup>

<sup>1</sup> Dipartimento di Patologia e Oncologia Sperimentali, Università degli Studi di Firenze, Italia

<sup>2</sup> Dipartimento di Anatomia, Istologia e Medicina Legale, Università degli Studi di Firenze, Italia

<sup>3</sup> Internistische Praxis, Koenigsweg 14, 24103 Kiel, Germany

<sup>4</sup> Chemistry and Science Studies, Virginia Tech, Blacksburg, VA 24060-5623, USA

Anatomists and many other medical specialists rely on clinical laboratories for critical information to assist in diagnosis, prognosis, and the evaluation of treatments. However, the clinical laboratories do not always accompany their numbers with sufficient information about the significance of certain results: how great the quantitative variation of a given parameter might be in healthy subjects, and how likely it might be that a given qualitative (“yes” or “no”) result is a false positive or false negative. This situation has been particularly troublesome in the case of HIV, because there is no “gold standard” HIV test and the typically quantitated measure, CD4, varies widely for a variety of reasons that have nothing to do with HIV infection. For example, a person pronounced HIV-positive after having some vaccinations became HIV-negative again after a time, something that is not regarded as possible if HIV-positive denotes definitely active infection, as is commonly assumed. An important consequence of deficient information about HIV epidemiology is that students of anatomy may fear risking possible infection in dissection laboratories when the actual risk is negligible even in respect to anonymous cadavers in South Africa where the supposed incidence of HIV is particularly high. We have previously pointed to the need to improve HIV epidemiology and related public policy by recognizing and taking into account the weaknesses in HIV testing, which are the probable reason for at least some of the troubling conundrums and mutually contradictory data that seem inexplicable: conflicting estimates of HIV infections and of HIV-disease deaths from equally authoritative sources; apparently drastically different primary modes of transmission in different geographic regions; extreme racial disparities in HIV infection, with Asians and Asian Americans consistently less affected, by about one third, than white Americans, while black Americans are affected by as much as an order of magnitude more than white Americans. Testing uncertainties doubtless also contribute to the confusion as to whether certain conditions (*e.g.* lipodystrophy or nephropathy) should be described as HIV-associated or as AIDS-associated. In recent work we have found that the immune system, including CD4 counts, can be markedly enhanced by easily modified dietary supplementation that has none of the toxic side-effects of the antiretroviral drugs currently used in the attempt to elevate CD4 counts in HIV-positive people.

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