



Richard Pang, PhD, FACB

Email: [ProQ@live.hk](mailto:ProQ@live.hk)

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### **Rounding up of numbers and significant figures: A headache?**

It is not uncommon that laboratories are juggling with (which is a headache) rounding up of numbers and significant figures for reporting their reference ranges and patient results. We understand that the British Standard 1957 no longer exists and was removed from the HKAS policy 5.8H in the FIFTH Edition of HOKLAS 015 and the so-quoted *Australian Standard 2706* <http://infostore.saiglobal.com/store/PreviewDoc.aspx?saleItemID=332610> (Preview only, Copyright) may not be that helpful for medical testing.

The following reference list would be helpful:

**Guide for the Use of the International System of Units (SI)** NIST Special Publication 811  
2008 Edition  
<http://physics.nist.gov/cuu/pdf/sp811.pdf>

Besides the general guidance for the use of SI units, the following sections are particularly useful:

#### **B.7 Rules for rounding numbers and converted numerical values of quantities**

Rules for rounding numbers are discussed in Refs. [4: ISO 31-0] and [6]; the latter reference also gives rules for rounding the converted numerical values of quantities whose values expressed in units that are not accepted for use with the SI (primarily customary or inch-pound units) are converted to values expressed in acceptable units. This Guide gives the principal rules for rounding numbers in Sec. B.7.1, and the basic principle for rounding converted numerical values of quantities in Sec. B.7.2. The cited references should be consulted for additional details.

## **Implementation of SI Units for Clinical Laboratory Data**

Ann Intern Med 1987; 106: 114-129.

<http://ajcn.nutrition.org/content/49/1/199.full.pdf>

Provides conversion tables for a wide range of clinical laboratory tests and recommendations on the significant digits and suggested minimum increment for reporting.

## **Laboratory Reference Values**

N Engl J Med 2004; 351:1548-1563

[http://www.medkaau.com/album/download.php?image\\_id=698](http://www.medkaau.com/album/download.php?image_id=698)

There are tables of reference values for adults for laboratory tests commonly ordered at the Massachusetts General Hospital (MGH) and recorded in the Case Records. The table revises the previously published data (Normal Reference Laboratory Values. N Engl J Med 1998;339:1063-72). Laboratory values are expressed in the units used at the MGH and the units of the Système International d'Unités (SI units). The table is not intended to provide a comprehensive review of reference values, since this information is widely available in standard textbooks.