The International Headache Society classification of primary headaches – the ICHD-II - is almost universally accepted by researchers and clinicians. It is highly unlikely that reputable journals will accept submissions for publication if the cohorts have not been selected strictly according the ICHD-II. Likewise, in the clinical setting the appropriate treatment is prescribed according to how the patient’s headache is classified. But how reliable is the ICHD-II? As it does not appear to be based on data, its scientific validity is questionable. If indeed it cannot be scientifically validated, then the results of research based on the ICHD-II would be inaccurate. The practical implications of this are that the research data on the efficacy of migraine drugs may be compromised. Patients diagnosed according to a classification that is not supported by scientific evidence may also be given the incorrect treatment.