



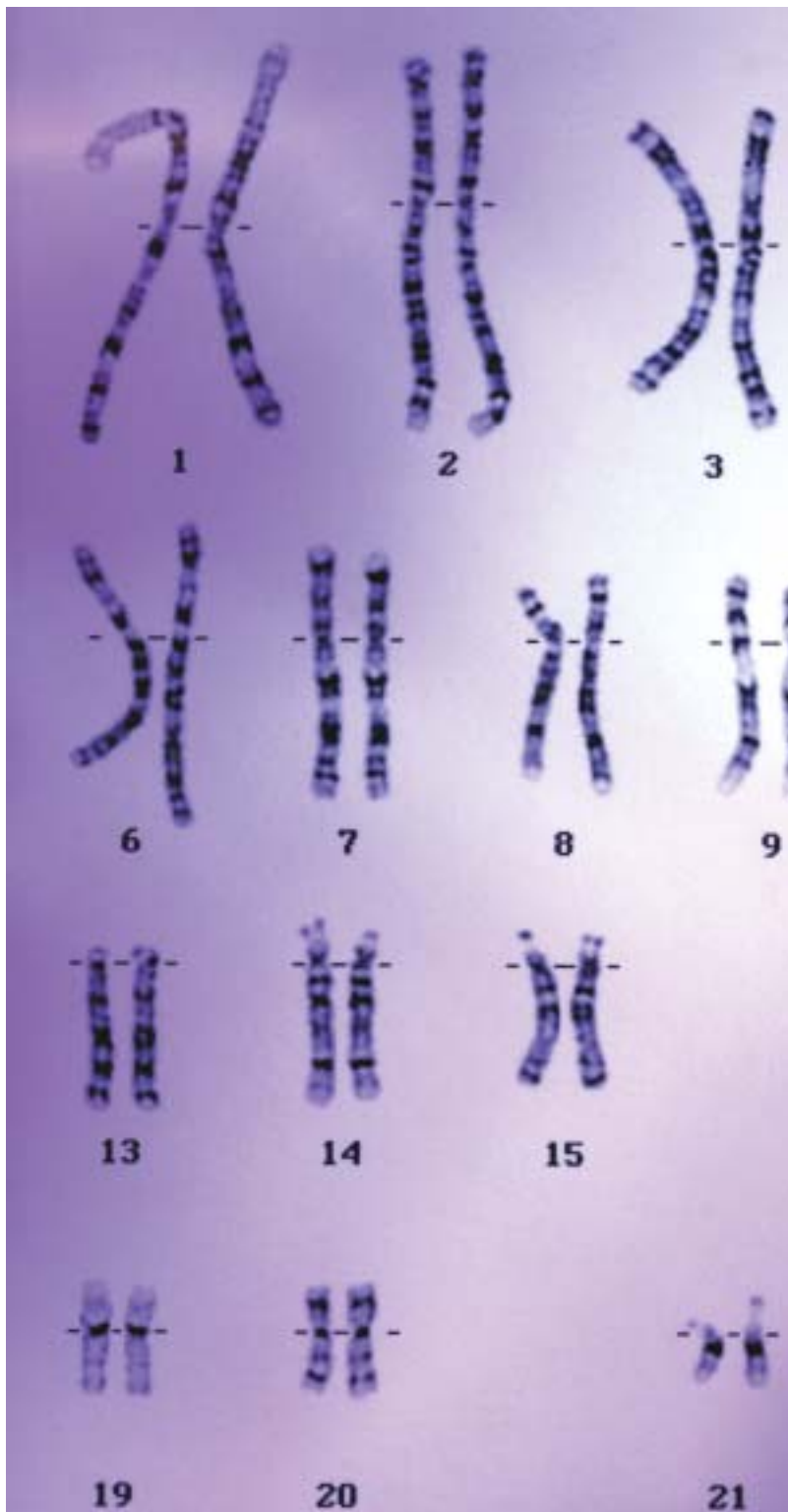
By Lee Lewis Husk

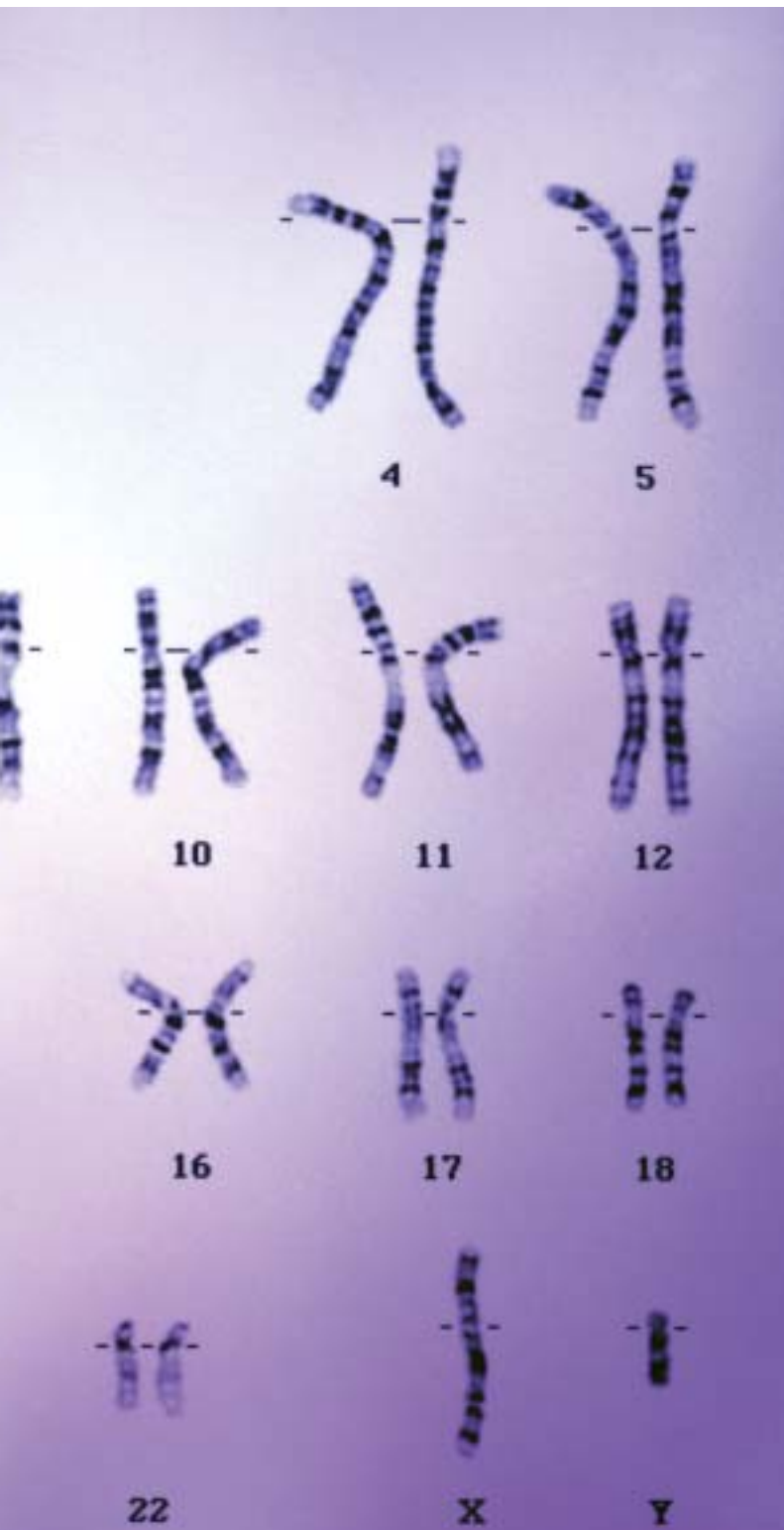
Methods of Scientific Discovery



“We’re on the cusp of a revolutionary breakthrough in the diagnosis and treatment of pain. We have mounting evidence of biochemical changes in the cerebral spinal fluid, blood flow changes and nerve fiber transmission abnormalities in pain. However, until we have these findings validated in large studies in multiple centers, we will continue to rely on patient self-report of pain.”

– Kim Jones, Ph.D., R.N





Article Compares Various Adult-Measures-of-Pain Scales

“This paper gives researchers a single document by which they can compare some of the most common pain scales currently used in rheumatology,” says Kim Jones, Ph.D., R.N., co-author of “Adult Measures of Pain,” published in the Oct. 15, 2003 issue of *Arthritis & Rheumatism* (*Arthritis Care & Research*).

Jones, assistant professor of nursing, and Carol Burckhardt, Ph.D., R.N., professor emeritus of nursing, assessed six commonly used pain scales. “(Because) we have no simple laboratory test to monitor pain, we must find questionnaires or self-report scales that most closely reflect a patient’s perception of pain severity, and the disruption the pain causes. Each scale has advantages and disadvantages that a researcher must weigh when deciding how to measure pain in a research study,” Burckhardt says.

Burckhardt and Jones hope pain researchers will get to the point where one or two scales, such as a visual analog scale or West Haven-Yale Multidimensional Pain, will allow comparison across studies. “When we can do a meta analysis and combine 15 studies done at 15 centers, we can begin to move our knowledge forward and also begin to look for novel subgroups or markers of chronic pain,” Burckhardt states.

“We’re on the cusp of a revolutionary breakthrough in the diagnosis and treatment of pain,” Jones says. “We have mounting evidence of biochemical changes in the cerebral spinal fluid, blood flow changes and nerve fiber transmission abnormalities in pain. However, until we have these findings validated in large studies in multiple centers, we will continue to rely on patient self-report of pain.”

She cautions, however, that even if a biomarker is developed, she wouldn’t want clinicians to stop listening to what patients are telling them about their symptoms or to put more value in scans or tests. “I think an ideal measure would be to have both objective and self-report pain scales. When this happens, we’ll

Methods of Research



have valid tests for pain that combine biochemical markers with cognitive perception and emotional response.

Burckhardt, C.S & Jones, K.D. (2003). Adult measures of pain: The McGill Pain Questionnaire (MPQ), Rheumatoid Arthritis Pain Scale (RAPS), Short-Form McGill Pain Questionnaire (SF-MPQ), Verbal Descriptive Scale (VDS), Visual Analog Scale (VAS), and West Haven-Yale Multidisciplinary Pain Inventory (WHYMPI). *Arthritis Care & Research*, 49:55, S96-S104.

Structural Models of Gender, Alcohol Consumption, and Health

Using sophisticated analysis techniques, researchers were able to “recycle” data originally collected for another study. “This paper came out of a secondary data analysis of a study on depression,” says Nancy Perrin, Ph.D., professor and director of statistics core, OHSU School of Nursing, and adjunct senior investigator at Kaiser Permanente Center for Health Research. “It’s an economical approach to doing research,” she says.

Although secondary data analysis has been around for years, Perrin says that funding agencies are excited about supporting this type of research because no new data must be collected and important questions can be answered.

The paper, “Structural Models of Gender, Alcohol Consumption, and Health,” was published in the January 2003 issue of the international journal, *Substance Abuse & Misuse*. Co-authors include Carla Green, Ph.D., M.P.H., and Michael Polen, M.A..

The researchers used structural equation modeling techniques on data obtained from a random sample (3,069 male and 2,600 female) of Kaiser Permanente patients. “We went back to the data set collected previously. It had the types of questions we needed, such as alcohol consumption, and measures of physical and mental functioning,” Perrin says. “We were also able to match responses with, in some cases, a diagnosis of alcohol abuse.”

They found that among non-drinkers, physical health was twice as strong a predictor of abstinence in women compared with men. Among drinkers, the researchers found no gender differences in the importance of health as a predictor of amount of alcohol consumed. “What this says is that women may be more amenable to interventions and messages, such as, ‘If you have health problems, you better not drink,’” according to Perrin. The researchers also found that respondents reporting better mental health were less likely to drink and, among drinkers, consume less.

Green, C.A., Polen, M.R., & Perrin, N.A. (2003). Structural models of gender, alcohol consumption, and health. *Substance use and misuse*, 38(1), 97-125.

The Utility of Family History in Predicting Risk

Can family history be used as a means to better health care? To find answers, a group of researchers, including Nancy Press, Ph.D., and colleagues at Fred Hutchinson Cancer Research Center in Seattle and the University of Washington, examined the current science of family history taking. They published their review, “Achieving Utility with Family History: Colorectal Cancer Risk,” in the 2003 *American Journal of Preventive Medicine* (Vol. 24, No. 2).

“This paper was a thought experiment from a lot of other data,” says Press, cultural anthropologist and professor. “We used a hypothetical family history story to illustrate the complex range of questions raised by the use of family history to predict risk,” the authors write. They cite the availability of new genetic testing and the importance of family history in determining whether the patient and his or her family should undergo testing or even just more intensive screening regimens.

By using colon cancer as a vehicle for discussion, the researchers conclude that many steps are necessary to incorporate new genetic testing information into primary care practice. “The potential of family

history as a health improvement tool is still under review,” they write.

“We need physicians who are well trained in genetics,” Press states. “We need patients who know or have access to family history, which may be difficult if someone is deceased, unwilling to cooperate or inaccessible. Providers must be willing to spend time on follow-up care, and insurance companies must be willing to pay for the added time it takes to fully discuss family history. When genetic testing is warranted, we need insurance companies that will pay.”

Even when all these factors fall into place, will patients change their behaviors when they know their genetic risks? It’s not clear, according to the researchers. However, they cite shared decision making between patient and provider as one way for patients to weigh the information they’re given and guide their choices.

Bowen, D.J., Ludman, E., Vu, T., Burke, W. & Press, N. (2003). Achieving Utility with Family History: Colorectal Cancer as an Example. *American Journal of Preventive Medicine*, 24(2):177-182.

Population-based Genetic Screening

When researchers found a genetic mutation in the hemochromatosis gene a few years ago, many people thought it might become the poster child for proving the usefulness of genetic screening, according to Nancy Press, Ph.D., professor, OHSU School of Nursing. Hemochromatosis is an inherited disorder that increases a person’s chance to develop iron overload, which can lead to cirrhosis, cancer, diabetes, heart disease and other disorders.

However, a large, ambitious, five-year study involving five primary care centers across the United States and Canada tested 100,000 people for the mutation to find the much smaller number of individuals who would likely have the mutation. “Our overall preliminary finding, in line with the findings of other research groups during this same period, is that we

have fewer people with the mutation who are sick than we expected to find,” Press says. “And knowing you have a gene for something doesn’t say how sick you’re going to be or whether you’re even going to get sick.” Press, a cultural anthropologist, is interested in the ethical, legal and social implications of genetic testing.

The hemochromatosis and iron overload screening study design was published in the February 2003 issue of the *American Journal of the Medical Sciences*. Press participated as a social scientist with Kaiser Permanente Center for Health Research in Portland and as the ethics representative on the study’s steering committee. The National Heart, Lung, and Blood Institute funded the study, in conjunction with the National Human Genome Research Institute.

In addition to providing a blood sample, participants answered questions about the psychosocial impact of being tested, their understanding of the disorder, the sharing of information with family members, adherence to medical advice about the disease, and any stigmatization or discrimination related to the screening.

“I’m interested in the societal downside of doing this, such as stigmatization and allocation of resources,” she says. “Just because we have a treatment for this disorder (phlebotomy therapy) doesn’t necessarily mean that we should do population screening, I’m not sure that it’s good evidence-based practice to pick people up when they might get sick. Rather, we might spend our time getting physicians to be more aware during a differential diagnosis.”

McLaren, C.E., Barton, J.C., Adams, P.C., Harris, E.L., Acton, R.T., Press, N., Reboussin, D.M., McLaren, G.D., Sholinsky, P., Walker, A.P., Gordeuk, V.R., Leiendecker-Foster, C., Dawkins, F.W., Eckfeldt, J.H., Mellen, B.G., Speechley, M. & Thomson, E. (2003). Hemochromatosis and Iron Overload Screening (HEIRS) study design for an evaluation of 100,000 primary care-based adults. *American Journal of Medical Science*, 325(2):53-62.