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Tattooing linked to higher risk of hepatitis C: UBC study

HAART helps prevent HIV transmission among individuals, reducing HIV diagnoses in the community

Youth, prison inmates and individuals with multiple tattoos that cover large parts of their bodies are at higher risk of contracting hepatitis C and other blood-borne diseases, according to a University of British Columbia study.

The researchers reviewed and analysed 124 studies from 30 countries, including Canada, Iran, Italy, Brazil and the United States, and found the incidence of hepatitis C after tattooing is directly linked with the number of tattoos an individual receives. The findings are published in the current issue of the *International Journal of Infectious Diseases*.

Tattoos have become increasingly popular in recent years. In the U.S., an estimated 36 per cent of people under 30 have tattoos. In Canada, approximately eight per cent of high school students have at least one tattoo and 21 per cent of those who don't have one want one. During tattooing, the skin is punctured 80 to 150 times a second in order to inject color pigments.

"Since tattoo instruments come in contact with blood and bodily fluids, infections may be transmitted if instruments are used on more than one person without being sterilized or without proper hygiene techniques," says lead author Dr. Siavash Jafari, a Community Medicine Resident in the UBC School of Population and Public Health (SPPH).

"Furthermore, tattoo dyes are not kept in sterile containers and may play a carrier role in transmitting infections," says Jafari. "Clients and the general public need to be educated on the risks associated with tattooing, and tattoo artists need to discuss harms with clients."

Other risks of tattooing identified by the study include allergic reactions, HIV, hepatitis B, bacterial or fungal infections, and other risks associated with tattoo removal.

The researchers are calling for infection-control guidelines for tattoo artists and clients, and enforcement of these guidelines through inspections, reporting of adverse events and record-keeping. They also recommend prevention programs that focus on youth – the population who are most likely to get tattoos – and prisoners – who face a higher prevalence of hepatitis C – to lower the spread of hepatitis infection. In Canada, 12 to 25 per cent of hepatitis C infections among prisoners are associated with tattooed individuals, compared to six per cent of the general population.

The chemical ingredients in tattoo dyes can include house paint, ink from computer printers, or industrial carbon. Toxic contents of some tattoo inks may be entering the kidney, lungs and lymph nodes through the circulatory system. The study also revealed a new trend among youth to get tattooed with glow-in-the-dark ink, the risks of which are not yet known.

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Co-authors of the study include Assoc. Prof. Jane Buxton from SPPH and the BC Centre for Disease Control; Mahyar Etminan, a scientist with the Centre for Clinical Epidemiology and Evaluation at Vancouver General Hospital and the Vancouver Coastal Health Research Institute; Dr. Ray Copes, clinical professor at SPPH and Dr. Souzan Baharlou with the Department of Urology at BC Children's Hospital.

BC Children's Hospital, an agency of the Provincial Health Services Authority, provides expert care for the province's most seriously ill or injured children, including newborns and adolescents. BC Children's is an academic health centre affiliated with the University of British Columbia, Simon Fraser University, and the Child & Family Research Institute. For more information, please visit www.bcchildrens.ca.

BC Centre for Disease Control (BCCDC) is an agency of the Provincial Health Services Authority that provides provincial and national leadership in public health through surveillance, detection, treatment, prevention and consultation services. The Centre provides both direct diagnostic and treatment services for people with diseases of public health importance and analytical and policy support to all levels of government and health authorities. BCCDC investigates and evaluates the occurrence of communicable diseases in BC and is the provincial reporting centre for reportable cases and categories of communicable diseases. In addition, the Centre creates opportunities for scientists, health professionals, university and other partners to contribute their knowledge and experience in resolving the outstanding health challenges facing British Columbians.

The UBC Faculty of Medicine provides innovative education programs in health and life sciences, teaching over 3,000 students at the undergraduate, graduate and postgraduate levels. In addition, over 700

researchers/faculty members representing all of the Faculty's 19 departments, two schools and 15 research centres and institutes received research grants. In 2008/09 the Faculty generated more than one-half of the total research funding of the university (\$475.3M). For more information visit www.med.ubc.ca.

The School of Population and Public Health became UBC's newest school in 2008, housed within the Faculty of Medicine. The school's main teaching focus is graduate education in areas ranging from public health to health policy. The school's research and teaching examines local, national and global health challenges and spans seven themes. For more information, visit www.spph.ubc.ca.

Vancouver Coastal Health Research Institute is the research body of Vancouver Coastal Health, which includes BC's largest academic and teaching health sciences centres: Vancouver General Hospital, UBC Hospital, and GF Strong Rehabilitation Centre. The institute is academically affiliated with UBC Faculty of Medicine, and is one of Canada's top funded research centres, with \$102 million in total research funding for 2008/2009. www.vchri.ca.

