

## PRESS RELEASE

### **CUHK study finds iron deficiency may affect attention function in school-aged adolescents**

(Hong Kong, 9 April 2025) – **A study conducted by the Faculty of Medicine at The Chinese University of Hong Kong (CU Medicine) revealed that the prevalence of iron deficiency among school-aged female adolescents in Hong Kong was 17.1%. Notably, adolescents with attention problems had lower iron reserves than those with intact attention function. The findings have been recently published in the *Hong Kong Medical Journal*.**

#### **One in ten female adolescents suffer from iron deficiency anaemia**

The study recruited 523 adolescents from 16 local secondary schools. The blood iron levels and complete blood counts of the participating adolescents were measured. They also completed a computerised assessment program to test their attention function and self-reported their fatigue level on the same day of the blood test. The team found that 17.1% of the girls had iron deficiency, based on the international threshold of iron level of <15 µg/L in the blood, and 10.9% had iron deficiency with anaemia. No boys were diagnosed with either condition.

Prof Chi-kong Li, principal investigator and paediatric haematologist and oncologist at CU Medicine, explained, 'Girls are at higher risk of developing iron deficiency and iron deficiency anaemia than boys because of greater iron requirements due to menstrual blood loss. Poor eating habits, such as skipping meals and a low intake of meat products and other iron-rich foods, may lead to iron deficiency too.'

#### **Lower iron reserves associated with attention impairment**

In the overall cohort, adolescents with sustained attention impairment had lower serum ferritin concentrations relative to those with intact attention function. A similar trend was observed among girls in the sex-stratified analysis. Adolescents who reported a higher level of tiredness also tended to show impairment in sustained attention and impulsivity on cognitive testing.

Co-Investigator Dr Dorothy Fung-ying Chan, a specialist in developmental-behavioural paediatrics at CU Medicine, remarked, 'Iron plays a crucial role in brain function. Iron deficiency can lead to disruptions in neurotransmitters, affecting a student's ability to stay focused during long lessons or examinations.'

**Consequences of low iron reserves should be emphasised among school-aged adolescents**

Co-Investigator Prof Yin-ting Cheung, Associate Professor of the School of Pharmacy at The Chinese University of Hong Kong, said, 'Adolescents with low iron reserves should receive counselling focused on the consumption of iron-rich foods, such as meat, eggs, dark green leafy vegetables, beans/peas, and fortified cereals. Certain individuals diagnosed with iron deficiency or iron deficiency anaemia may require iron supplementation.'

Prof Li emphasised that iron deficiency prevention in adolescents requires effective management of knowledge gaps related to food nutrition, dieting, and body image, 'It is important for the government and schools to develop nutrition education programmes to encourage proactive adoption of dietary and other nutrition-related behaviours that promote health and well-being.'

The article "Impact of iron deficiency on attention among school-aged adolescents in Hong Kong" was published in the *Hong Kong Medical Journal*. <https://doi.org/10.12809/hkmj2310950>

## 新聞稿

### 中大研究發現缺鐵可能影響學齡青少年專注力

（香港，2025年4月9日） — 香港中文大學（中大）醫學院一項研究顯示，香港學齡青少年女童的缺鐵率為 17.1%。值得注意的是，有專注力問題的青少年的鐵儲備低於專注力功能正常的同齡人。研究結果最近已在《香港醫學雜誌》發表。

#### 約一成女孩患有缺鐵性貧血

該研究招募了 16 所本地中學的 523 名青少年，測量他們的血液鐵水平和全血計數，並讓他們在同一天完成電腦專注力診斷測驗和自報疲勞程度。研究結果顯示，根據國際標準（血液中鐵水平 <math>15 \mu\text{g/L}</math>），17.1% 女孩缺鐵，而女孩缺鐵性貧血的流行率為 10.9%。沒有男孩缺鐵或出現缺鐵性貧血。

首席研究員、中大醫學院兒童血液及腫瘤科專科醫生李志光教授解釋：「由於月經失血導致的鐵需求增加，女孩缺鐵和缺鐵性貧血的風險高於男孩。飲食習慣不良，例如少吃正餐和進食肉類產品及其他富含鐵的食物不足，也可能導致缺鐵。」

#### 低鐵儲備與專注力障礙相關

在整體樣本中，持續專注力障礙青少年的血清鐵蛋白濃度低於專注力功能正常的青少年。在性別分層分析中，女孩的情況亦呈現類似趨勢。報告感到疲倦的青少年在認知測試中也傾向顯示持續專注力和衝動性受損。

聯合研究員、中大醫學院兒童體智及行為發展學科專科醫生陳鳳英指出：「鐵質對於腦部功能十分重要，缺鐵會干擾神經遞質，影響學生在長課堂和考試期間保持專注。」

#### 應強調學齡青少年低鐵儲備的後果

聯合研究員、中大藥劑學院副教授張彥婷表示：「鐵儲備不足的青少年應接受以攝取富含鐵的食物為重點的營養諮詢，這些食物包括肉類、蛋類、深綠色葉菜、豆類和強化穀物。被診斷為缺鐵或缺鐵性貧血的人士可能需要補充鐵劑。」

李教授強調，預防青少年缺鐵需要向青少年推廣與食物營養、飲食和身體形象相關的知識。他表示：「政府和學校應推行營養教育計劃，以鼓勵青少年主動確立健康飲食習慣。」

詳細內容可參閱原文《缺鐵對香港學齡青少年專注力的影響》。

Source: YT Cheung, Dorothy FY Chan, CK Lee, et al. Impact of iron deficiency on attention among school-aged adolescents in Hong Kong. Hong Kong Med J 2025;31:Epub 9 Apr 2025.  
<https://doi.org/10.12809/hkmj2310950>.

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