Relative constancy of urinary creatinine and urochrome. By K. S. **ISMAIL,** M. **A. KHAN**a nd **A.** E. BENDER ***Department of Nutrition, Queen Elizabeth College, London W8 7AH***

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Because of the difficulty of obtaining with certainty a **24** h sample of urine, the estimation of urinary constituents is often related to the creatinine output. This is based on the finding that creatinine excretion is related to muscle mass and independent of diet (Folin, ***1905).*** However, recent work shows that the daily output of creatinine can vary considerably, even in the same individual (Paterson, **1967).** Since the output of urochrome, the principal pigment of normal urine, is related to general metabolism and is said to be constant for an individual (Drabkin, ***rgso),*** the urinary excretions of creatinine and urochrome were compared.

Twenty-four hour samples of urine were collected daily for **6** successive days from twenty-five subjects (nineteen females and six males). Creatinine was estimated by Jaffe's picrate method and an index of the urochrome was obtained on an arbitrary scale by comparing the urine colour with standard solutions of potassium chromate. The constancy of the daily output of each subject was estimated by averaging the standard deviations and coefficients of variation of the six successive daily values for each subject. The results were: urochrome, mean SD **154,** mean **cv 19.7;** creatinine, mean **SD +170,** mean cv **16.6.**

The over-all constancy of output was then estimated by calculating the SD and CV of the mean of the mean daily output values of each subject. The results were: urochrome, mean ***293*** units, range ***135-470*** units, SD +58, CV 20; creatinine, mean **1145** mg, range ***571-2119*** mg, SD ***+335,*** **cv 29.**

The results indicate that for one individual daily creatinine output is less variable than urochrome and that, as a general measure for any individual, urochrome is more constant than creatinine. The procedure of basing urine analyses on creatinine or colour excretion on the assumption that the **24** h output **of** these index substances is constant leads to an error of the order indicated by the coefficients of variation above.

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