REVIEW OF LITERATURE
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A number of studies have been conducted using urine examination as the tool for detection of asymptomatic urinary abnormalities and surprisingly vast majority of causes have been found out all differing between age, sex, socio economical status and geographic distribution.

Kidney disease detection camp (1994-1996) - A tool for preventive Nephrology conducted by – Vidya N. Acharya, Kumad Mehta et al This study involved 430 subjects seen in 3 Kidney disease detection camps held in the city of Mumbai to cover low socio economical group (LSEG; nz 244) and mid socio economical group (MSEG; nz 186). The aim was to detect the presence of urinary abnormalities and assess the significance of the same. Subjects attending the camp had their vital data and BP recorded in a specially designated Performa. A fresh sample of urine was obtained from each of them and examined by using multistix. Those having any clinical or urinary abnormity were reassessed next morning & findings were confirmed. Urinary abnormalities were detected in 42.1% of total subjects (181/430) of which 45.5% were in low-socioeconomic group & 37.6% in mid-socio economic group. In this total of 181 urinary abnormalities 37.8% (111/244) were asymptomatic from LSEG and 47% (70/156) from MSEG. The study found that Asymptomatic urinary abnormalities were associated with hypertension (19.8% in LSEG & 40% in MSEG-P<0.001); Diabetes mellitus (8.1% LSEG & 11.4% in MSEG) and stone disease (1.8%c in LSEG & 1.4%MSEG).
In advanced countries like Japan mass screening programmes with compulsory urine screening in children enabled them to detect disease in pre-symptomatic stage successfully. Such studies have been done in adult population too in Japan (all since 1947). During these last 40-50 years, they have been also to detect pre-symptomatic glomerulopathies of various types like IgA nephropathy, membrane proliferative GN etc. and have recommended early treatment for the same. This study her revealed that main causes of urinary abnormalities in our Community has been in association with common maladies like Hypertension (27.6%); Diabetes mellitus (9.4%) which affect the population at large. Simple urine examination on yearly basis would certainly help in early detection of renal involvement and thereby form a valuable tool in the practice of preventive Nephrology.
To define the long-term outcome of patients with minimal urinary abnormalities (defined by the presence of microscopic hematuria with on less than 1 gm/day proteinuria), and normal renal function (defined by a serum creatinine< 1.3 mg/dl), Shu KH, Ho WL, Lu YS, Cheng CH, Wu MJ, Lian JD Department of Internal Medicine, Taichung Veterans General Hospital, Taiwan retrospectively studied patients who fulfilled the above criteria and had a kidney biopsy done before the year of 1992 (i.e. at least followed up for 5 years), with a definite pathological diagnosis. A total of 41 cases among 719 cases of primary glomerulonephritis (5.7%) were enrolled into the study. There were 19 males and 22 females with a mean age of 35.4+/-14.7 years at biopsy. The duration of renal disease was 116.0+/-60.5 months and the duration of follow-up post biopsy was 100.2+/-38.1 months. The pathological diagnosis was: IgA nephropathy (21 cases) , focal glomerulosclerosis (9cases), mesangial proliferative glomerulonephritis (8cases) , membranous glomerulonephritis (2cases) and acute glomerulonephritis (1cases) . At the end of follow-up, 8 cases (19.5%) had a certain degree of renal insufficiency including 2(4.9%) in end-stage renal disease. The other cases were either in complete remission (6cases) or stable condition (27cases) with persistent microscopic hematuria and normal renal function. The long-term outcome was not correlated with any of the following parameters: age, sex , disease duration , serum creatinine at presentation, daily protein loss at presentation , degree of glomerular change and degree of tubular atrophy (P<0.05) and interstitial fibrosis(P<0.05). They conclude that a minimal urinary abnormality with normal renal function at presentation does not necessarily imply a favorable long-term outcome in certain patients. Tubular atrophy and interstitial fibrosis but not glomerular change correlates with a worse prognosis. This further emphasizes the importance of renal biopsy in such cases.
Monhart V, Marek J, Krnch O Ustredni vojenska nemocnice, Praha studied 103 subjects with asymptomatic isolated haematuria (Persisting for more than 6 months in the absence of proteinuria, bacteriuria, impaired haemocoagulation or urological disease) renal biopsy was preformed. The mean age of the patients was 25.2 years, range 14-58 years. In 94% glomerular changes were detected- most frequently minimal glomerular lesions (67%) and proliferative mesangial glomerulonephritis (15%). Focal segmental proliferative glomerulonephritis was rare (4%). Immunofluorescent examination revealed IgA nephropathy in 40% (all cases of diffuse and focally segmental proliferative glomerulonephritis and one quarter of minimal glomerular lesions). Changes of tubules and interstitium were recorded in 26%, with the exception of one patient they were always associated with glomerular affection. From the investigation ensues that the predominating cause of isolated asymptomatic haematuria, not clarified by non-invasive examination, is usually not serious and is an affection frequently associated with tubulointerstitial changes. As many as 40% of isolated cases of haematuria may be the manifestation of IgA nephropathy. The deposition of IgA is more frequently associated with a more advanced grade of glomerular affection; Indication of diagnostic renal biopsy in isolated haematuria remains individual.

Topham PS, Harper SJ, Furness PN, Harris KP, Walls J, Feehally J Department of Nephrology, Leicester General Hospital, UK, investigated 165 patients (94 male, 71 female; mean age 37.5 years, range 10-71) referred with isolated microscopic hematuria with normal serum creatinine, no proteinuria, sterile urine and a normal IVU. Renal biopsy abnormalities were found in 77/165 (46.6%). IgA nephropathy (49), global or segmental mesangial proliferative glomerulonephritis without IgA deposits (16), thin membrane nephropathy (7), vascular changes
suggestive of hypertension (3), interstitial nephritis (1), and membrane nephropathy (1). Only five abnormalities were found on cystourethroscopy (cystitis3, urethral stricture1, and bladder stone 1). Two patients with cystitis also IgA nephropathy. Biopsy abnormalities were commonest under the age of 20(69.2%) , but 40% of biopsies were abnormal even in the seventh decade of life, Because renal biopsy abnormalities are very frequent in patients with isolated haematuria , renal biopsy is indicated in patients over 45 years of age if renal imaging and cystoscopy are normal. In those under 45 years, renal biopsy should replace cystoscopy as the investigation to follow normal renal imaging.

Hrvacevic R, Dirnitrijevic J, SpasicP, Butorajac J, Jovanovic D analyzed histopathologic changes in the kidneys of patients with asymptomatic abnormalities of urine analysis if they were correlated with the type of pathologic finding in urine. Retrospective study comprised a total of 76 patients with asymptomatic urine abnormalities. In all three groups of patients, formed upon the type of pathologic finding in urine, were determined heterogeneous histopathologic changes, and different types of glomerulonephritis, respectively. The most frequent histopathologic finding was IgA nephropathy, observed in 16.7% patients with isolated proteinuria, in 50% patients with isolated microscopic hematuria and in 55.9% patients with associated urine abnormalities, In distinction from the other two groups of patients, in the group of patients with isolated proteinuria normal histologic finding was very frequently found (25% patients,), and in group of patients with associated urine abnormalities were observed more severe histopathologic forms of glomerulonephritis, such as membranoproliferative Glomerulonephritis. It was concluded that different types of glomerulonephritis most frequently caused asymptomatic abnormalities of urine in younger patients. In a
prospective study of idiopathic glomerulonephritis, Nieuwhof C, Doorenbs C, Grave W, de Heer F, de Leeuw P, Zeppenfeldt E, van Breda Vriesman PJ, Department of Immunology, University of Limburg, Maastrict, The Netherlands, determined the natural history of 49 adult patients (12 primary IgA nephropathy, 13 thin GBM nephropathy, 20 normal renal tissue and 4 miscellaneous nephropathies) who presented with idiopathic non-proteinuric non-azotemic hematuria of at least six months duration in the absence of hypertension and with a negative urological work-up. The median follow-up was 11 years with a range of 8 to 14 years. At the end of the follow-up, renal function had remained stable in all subsets except for those with miscellaneous disease. Hematuria was still present in all patients with thin GBM nephropathy, in all but two patients with IgA nephropathy who went into immunopathological remission, in three out of four miscellaneous nephropathies, and in seven out of 20 patients with normal renal tissue. Of the latter patients five had a history suggestive of urolithiasis at follow-up, which was in the absence of hypercalciuria and hyperuricosuria. Seven thin GBM patients, five IgA nephropathy patients and three miscellaneous nephropathies developed hypertension; the incidence of hypertension in each subset was significantly higher than in patients with normal renal tissue. This study shows that in young adults with idiopathic chronic non-proteinuric hematuria of four years duration, renal biopsy will give a definite diagnosis in 86% patients, and that those patients with so-called minor glomerular disease are at high risk for hypertension. Those patients with normal renal tissue have a high incidence of urolithiasis and should have a urological follow-up.

In a mass screening programme- Hisano S, kwano M, Hatae K, Kaku Y, Yamane I, Ueda K, Uragoh K, Honda S, Department of
pediatrics, Faculty of Medicine, Kyushu University, Fukuoka, Japan--screened 251 children with isolated microhaematuria. Of these 251 children, 115 were excluded from the study because of microhaematuria secondary to a specific cause. The remaining 136 children were diagnosed as having asymptomatic isolated microhaematuria (ASH). Of these 136 children, 23 had evidence of urinary abnormalities in their family members, red blood cell casts were evident in 31 children at their initial visit or during the follow-up period. Ten children had one or more episodes of macrohaematuria during the study. Renal biopsy was performed in 19 children because of indications of glomerular disease, and 13 of these 19 children had mild to moderate glomerulonephritis. None of these 136 children developed hypertension or renal impairment after a mean period of 7.4 years (range 6-13 years). Thirty-five children had normal urinary findings within 6 years of their initial visit, and 100 have had persistent microhaematuria with proteinuria greater than 1g/m² per day at the end of the study. This study suggests that the prognosis of ASH is good, and that renal biopsy is not indicated for children with ASH.

Benbassat J, Gergawi M, Offringa M, Drukker A Department of Sociology of Health, Faculty of Health Sciences, Ben-Gurion University, Beer-Sheva, Israel--reviewed published data on the frequency of underlying disorders in schoolchildren with microscopic or gross isolated haematuria (IH), and evaluated management strategies. They found five reports of microscopic IH in screened asymptomatic schoolchildren, three reports of microscopic IH detected by case-finding, and five surveys of kidney biopsies in referred children with microscopic and gross IH. They listed the reported underlying disorders, and estimated the benefit from their early detecting and treatment. Most children with microscopic IH, whether detected by screening or case-finding, had no
significant underlying disease. Some had disorders that may benefit from early treatment (membranoproliferative glomerulonephritis, obstructive uropathy, urolithiasis), or counselling (hereditary nephropathy, renal cystic disease). The combined prevalence of these five diseases was 0-7.2% in children with microscopic IH detected by screening, and 3.3%-13.6% in those with microscopic IH detected by case – finding. The combined prevalence of membranoproliferative glomerulonephritis and hereditary nephropathy among kidney biopsies was 11.6%-31.6% in children with microscopic IH, and 3.6%-42.1% in children with gross IH, Variable management strategies for schoolchildren with IH result from uncertainly about the frequency of underlying disorders and the efficacy of their early treatment. With no evidence that detecting IH leads to prevalence of renal function impairment, screening for IH in symptom less schoolchildren is not warranted. Once detected, however, IH justifies further investigation.

Since 1998, mass urine screening tests have been performed on Korean school children. Cho BS, Kim SD, Choi YM, Kang HH
Department of Pediatrics, College of Medicine, Kyung-Hee University Hospital, 1 Hoegi-dong Dongdaemun-ku, Seoul, Korea have analyzed those patients who showed abnormal urinary findings in the school screening program. Between January 1998 and January 2000, 452 children with abnormal urinary findings visited the Pediatric Kidney Center, Kyung-Hee University Hospital. Sex, age, 24-h urine creatinine clearance, ultrasonography, Doppler scans and renal biopsies were reviewed retrospectively. Results of initial urinalysis were divided into three groups: solely hematuria group (228 cases, 50.4%), solely proteinuria group (98 cases, 21.7%), and combined hematuria and proteinuria group (79 cases, 17.5%). Among the biopsies cases, the proportions representing renal
parenchyma diseases were as follows: IgA nephropathy 11.3%, mesangial proliferative glomerulonephritis 21.9%, others 3.8%. Among the three groups, the combined hematuria and proteinuria group had more frequent chronic renal disease (57.7%) than the other groups. Chronic renal disease was detected in 36.9% of all visiting subjects. In the school screening program a significant number of patients showed abnormal urinary findings, which were associated with chronic renal diseases especially in the combined hematuria and proteinuria group. In conclusion, mass urine screening tests should be mandatory to detect asymptomatic chronic renal disease in school children.

Lin CY, Sheng CC, Lin CC, Chen CH, Chou P. Department of Pediatrics, Section of Immunology & Nephrology, Taipei Veterans General Hospital, No. 201, Sec. 2, Shih-Pai Road, Shih-Pai, Taipei, 11217, Taiwan screened students of public and private elementary and junior high schools in the Province of Taiwan each semester since 1990. About 3 million students were screened each time. The students who had abnormal urine screening results at the first time received a second urine analysis 10 to 15 days later to confirm the abnormal urine analysis. The blood samples of the students with abnormal urine examination were taken and biochemistry examinations including creatinine (Cr) etc. were performed since 1992. All students with abnormal urine screening results were graded by the severity of hematuria and proteinuria, the heavy proteinuria graded as "D". Chronic renal failure (CRF) is defined as impaired renal function with the serum Cr over 1.7 mg/dl. Longitudinal continuous blood and urine examinations were performed each semester for the students of grade "D" and with CRF. CRF was confirmed by either the hospital medical records or telephone visit. The purpose of this study was to delineate the prevalence of heavy proteinuria (grade D) and CRF in
the students of elementary and junior high school in the Taiwan Province from 1992 to 1996. The results revealed the number of urinary screening was 10,288,620. There were 5980 cases with heavy proteinuria with four-year prevalence of 5.81 x 10(-4), 4.83 x 10(-4) for boys; 6.87 x 10(-4) for girls. Girls were affected more often than boys. The peak age of girls was 12 years old and boys were 13 years old. The number of CRF cases was 189 with the four-year prevalence of 1.84 x 10(-5), 2.24 x 10(-5) for boys; 1.41 x 10(-5) for girls. The incidence rate increased after the age of 10; the peak age of boys being 14-year-old and of girls 12-year-old. The exact contributing factors, such as location on islet or lack of pediatric nephrologist, need further study. In conclusion, the four-year prevalence of heavy proteinuria in the students of the elementary and junior high schools in Taiwan was higher in girls than in boys. Glomerular nephritis (GN) is still one of the major causes of urinary abnormalities. The most-important secondary GN was systemic lupus erythematosus (SLE) with lupus nephritis. The percentage of SLE patients among anti-nuclear antibody (ANA) positive was 72%. In contrast, the four-year prevalence of CRF disease was higher in boys with the peak age at 14-year-old. GN is still the major cause of urinary screening abnormality. ANA study is indicated in all Chinese students with abnormal urinary screening.

Clinicohistopathologically, Takebayashi S, Yanase K. Second Department of Pathology, School of Medicine, Fukuoka University, Japan observed 109 patients with asymptomatic urinary abnormalities found via the Japanese school medical screening process. Follow-up was for a mean period of 9.3 +/- 4.0 years. More than 80% of the patients had either IgA nephropathy (IgAN, 47 cases, 43.1%), thin membrane disease (TMD; 21 cases, 19.3%) or normal glomerulus (NG; 20 cases, 18.3%). Complete remission appeared in 60.0% of the NG cases, 14.3% of the
TMD cases and in 19.1% of the IgAN cases, and remission was significantly high in the NG group (p less than 0.01). No patient with TMD and NG ever progressed to the extent of pronounced proteinuria or renal failure. One patient deteriorated and required hemodialysis, and 2 patients developed renal insufficiency in IgAN. All of these cases possessed severe glomerular sclerotic change when the initial biopsies were performed. All IgAN cases that went into remission, however, had minor glomerular abnormalities. A positive family history of urinary abnormality was observed in 14.1% of both the IgAN group and the NG group, whereas we observed 71.4% in the TMD group, which was significantly high (p less than 0.01). Other cases included 4 each with non-IgA proliferative glomerulonephritis, focal segmental glomerular sclerosis, membranoproliferative glomerulonephritis and Alport's nephritis. It was concluded that the majority of patients (80.7%) with urinary abnormalities found via the school screening program had IgAN, NG or TMD. 74.5% of the IgAN group and 85.7% of the TMD group had long histories of urinary abnormalities extending into adulthood with no deterioration of the renal function.

Wei JN, Chuang LM, Lin CC, Chiang CC, Lin RS, Sung FC. Institute of Environmental Health, National Taiwan University College of Public Health, 1 Jen Ai Road, Section 1, 100, Taipei, Taiwan (1993-1999), did a mass screening programme to describe the gender differences in cases and characteristics of diabetes mellitus (DM) that can be identified from a mass urine screen program for school children in Taiwan. Screening for the childhood asymptomatic proteinuria and glucosuria began in 1992 for school children. Students were instructed to collect mid-stream samples of the first morning urine for glucosuria and proteinuria tests using urine strip devices. Students with positive results for
glucose and/or protein and/or occult blood in the first examination received a second urine test. The third screening test was performed for urine and fasting blood sample for 11-item examinations if the second test was positive. The 1997 criteria of American Diabetes Association were used for defining DM. Approximately 2615000-2932000 students received the preliminary screening each semester. The overall average rates of newly identified diabetes from 1993 to 1999 were 8.3 per 100000 among boys, and 12.0 per 100000 among girls. The average rate of new cases increased significantly from sixth grade for boys and fourth grade for girls, with peak rates of 14.7 per 100000 in eighth grade for boys and 19.0 per 100000 in sixth grades for girls. Similar prevalence trends by sex and grade were observed, higher in girls than in boys. This mass screening data suggest that childhood diabetes of all types in Taiwan is elevated in the age of puberty and higher in girls than in boys.

By governmental mandate, Japanese school children are screened annually for proteinuria, hematuria, and glucosuria to identify children with possible renal disorders. Pugia MJ, Murakami M, Lott JA, Ohta Y, Kitagawa T, Yamauchi K, Suhara Y, Kasjima J. added urine dipstick tests for albumin and creatinine to the Japanese screening protocol, and used their dipstick results for blood, glucose and protein. The sulfosalicylic acid precipitation test was used to confirm "trace" positive protein dipsticks. The Japanese and our screening protocol have in common the same data for glucosuria and proteinuria. Their scheme has an algorithm for repeat testing of children with abnormal results, and further testing and medical evaluation for those showing persistently abnormal values. Out of the 23,121 students, we found seven with likely nephritis, one with confirmed nephritis, one with nephrotic syndrome, 170 with persistent unexplained hematuria, 19 with persistent unexplained proteinuria, 14 cases of urinary
tract infection, and 20 cases of likely diabetes mellitus. We conclude that dipstick testing for albumin, protein, creatinine, glucose and occult blood has significant value in a multilevel testing scheme for identifying children with urinary tract abnormalities or diabetes. The assay of albumin increases the sensitivity of the screening, and dividing the albumin by the creatinine concentration reduces the potential errors arising from concentrated or dilute urines.

Beginning in 1974, the Japanese Ministry of Health Welfare directed the screening of schoolchildren for proteinuria. Pugia MJ, Lott JA, Kajima J, Saambe T, Sasaki M, Kuromoto K, Nakamura R, Fusegawa H, Ohta Y studied their procedure and methods in 6197 school children and also evaluated a new urine dipstick that measures albumin concentrations down to about 10 mg/l and creatinine down to about 300 mg/l. They used specimens from adult in- and outpatients to test the accuracy of the dipsticks. Based on the quantitative results, they set as cutoffs < 150 mg/l for protein and < 30 mg/l for albumin as the concentrations representing "low risk." The quantitative values were assumed to be correct, and the dipstick results were judged accordingly, i.e., a dipstick protein of > or = "150" mg/l or an albumin of I "30" mg/l indicated increased risk of developing or having a genitourinary disorder. The sensitivity/specificity of the protein dipstick was 95.1%/95.5%, and the same for the albumin dipstick was 83.8%/93.8%. The cut-off for the albumin dipsticks probably should be set somewhat lower to reduce the number of false negatives and increase the sensitivity of the dipstick. When they compared the quantitative albumin to the protein dipsticks with the above cut-offs, they found the sensitivity/specificity to be 79.3%/94.4%, i.e., much like the albumin dipstick results. The many reports on the association of albuminuria and risk of renal disease recommend that
screening should be done for albumin rather than protein. Based on the data from the school children, we estimate that a dipstick albumin of "30" mg/l is borderline increased risk, and that a protein dipstick of "150" mg/l is the same. If they call the dipstick "10" mg/l albumin, "30" mg/l albumin and the "150" mg/l protein results "low risk," then they estimate the prevalence of albuminuria in the school children to be about 2.1% and proteinuria to be about 4.3%. Children with these values should have a quantitative test for albumin and protein. They also tested a dipstick for creatinine and found increasing values with increasing age in both genders; the older boys had significantly higher creatinine values than the older girls and younger boys. For the albumin/creatinine ratio, we found 6028 children with a ratio of > or = 30 mg/g indicating low risk and 159 children with a ratio of > or = 30 mg/g indicating increased risk. The ratio may be more useful owing to the likely reduction of the number of false negative and false positives.

Screening urine for microhematuria as an indicator of serious disease is controversial because of the low positive predictive value of such screening and the costs and risks of the associated evaluation. To further evaluate test properties, Hiatt RA, Ordonez JD. Division of Research, Kaiser Permanente Medical Care Program, Oakland, California 94611 retrospectively examined the outcomes of 20,571 men aged > or = 35 years and women aged > or = 55 years who voluntarily had a Personal Health Appraisal in 1980 as members of a large prepaid health plan. Hematuria was detected by dipstick in 876 cases (4.3%); 278 were excluded because of evidence of previous urological disease which could cause hematuria. Review of the medical records of 598 patients with asymptomatic microhematuria as shown by a positive dipstick result indicated that 99% had a follow-up evaluation within 3 months of positive
test results for hematuria and had various levels of urological evaluation thereafter. However, urological cancers (2 prostate, 1 bladder) developed in only 3 patients within the next 3 years. On the basis of San Francisco-Oakland Surveillance, Epidemiology, and End Results program data, rates of urological cancer were evaluated among patients whose test results were negative for hematuria, and these cancer rates were found to be almost the same as the rate among patients with asymptomatic microhematuria. Sensitivity of a single dipstick urinalysis result using microhematuria to indicate urological cancer within 3 years was 2.9%; specificity was 96.7%; and positive predictive value was 0.5%. Multivariate analysis which adjusted for age, gender, and race showed that the relative risk of 2.1 (95% confidence interval, 0.7-6.6) for urological cancer was not significantly elevated among patients with asymptomatic microhematuria compared with patients who had negative test results. These findings based on a single test are consistent with the current lack of recommendations for screening for microhematuria among asymptomatic adults.

The prevalence and incidence of renal diseases in developing countries are not known. This lack of knowledge is an obstacle to the adoption of preventive measures which may be of great value in a social and economic environment where treatment options for end-stage renal failure are simply not available to the vast majority of the population. Urinalysis, a simple and inexpensive test, remains a cornerstone in the evaluation of the kidney and may also be easily employed in mass screening for renal abnormalities in a developing country. Plata R, Silva C, Yahuita J, Perez L, Schieppati A, Remuzzi G. Mario Negri per L'America Latina, Renal Diseases Project, Department of Nephrology and Dialysis Hospital Juan XXIII, La Paz, Bolivia. Conducted an
educational campaign on renal diseases in three selected areas of Bolivia. Urine samples were collected and sent to one of 21 participating clinical centers. Fresh urine specimens were screened using a dipstick for chemical analysis and by microscopic urinalysis after centrifugation. In those patients in whom urinary abnormalities were found, further investigations were carried out in order to define the diagnosis; these patients were enrolled in a 3-year follow-up program. Apparently healthy subjects (n = 14,082) were referred to the First Clinical and Epidemiological Program of Renal Diseases from rural and metropolitan areas in Bolivia. Urinary abnormalities were detected in 4261 subjects at first screening. The most common form of urinary abnormality was hematuria, which was found in 2010 (47% of positively screened subjects). Other renal abnormalities were leukocyturia (41%) and proteinuria (11%). Confirmatory tests and further clinical studies were then carried out in 1019 people. On a second screening 35% of the subjects had no urinary abnormalities; in the remaining people the following diagnosis were made: asymptomatic urinary-tract infection (48.4%), isolated benign hematuria (43.9%), chronic renal failure (1.6%), renal tuberculosis (1.6%). Other diagnosis were: renal stones 1.3%, diabetic nephropathy 1% and polycystic kidney diseases 1.9%. CONCLUSIONS: This study helped define for the first time the frequency of asymptomatic renal diseases in Bolivia. It shows that it is possible to screen a large population of patients at relatively low cost, providing the framework for further action that may help in the prevention and timely diagnosis of renal diseases.

A possible method of improving the prognosis of bladder cancer may be the widespread introduction of screening. Britton JP, Dowell AC, Whelan P, Harris CM. Department of Urology, St. Jame's University Hospital, Leeds, United Kingdom, investigated the ability of urine
dipsticks to detect early bladder cancer in a group of men in the community. In 2,356 men more than 60 years old the urine was tested with a dipstick for the presence of blood. The subjects then tested their own urine on 10 subsequent occasions. Of the men 474 (20%) had dipstick hematuria and 319 agreed to undergo urological investigation. An asymptomatic bladder tumor was found in 17 men, associated in 10 with abnormal urine cytological findings. Urine dipsticks for the detection of red cells provided an inexpensive, simple and acceptable screening test for bladder cancer. However, introduction of generalized population screening by this method would produce large numbers requiring investigation. Combining urine cytology with dipstick hematuria results may provide a realistic alternative and further evaluation of the effectiveness of screening for bladder cancer in the community is required.

Microalbuminuria (MA) is associated with adverse health outcomes in diabetic and hypertensive adults. The prevalence and clinical significance of MA in nondiabetic populations is less clear. Jones CA, Francis ME, Eberhardt MS, Chavers B, Coresh J, Engelgau M, Kusek JW, Byrd-Holt D, Narayan KM, Herman WH, Jones CP, Salive M, Agodoa LY. Division of Genetics and Epidemiology, Joslin Diabetes Center, Boston, MA, 02215, USA. camille.jones@joslin.harvard.edu did a study to generate national estimates of the prevalence of MA in the US population. Untimed urinary albumin concentrations (UACs) and creatinine concentrations were evaluated in a nationally representative sample of 22,244 participants aged 6 years and older. Persons with hematuria and menstruating or pregnant women were excluded from analysis. The percent prevalence of clinical proteinuria (UAC > or = 300 mg/L) was similar for males and females. However, the prevalence of MA (urinary albumin-creatinine ratio [ACR], 30 to 299 mg/g) was significantly lower in
males (6.1%) compared with females (9.7%). MA prevalence was greater in children than young adults and increased continuously starting at 40 years of age. MA prevalence was greater in non-Hispanic blacks and Mexican Americans aged 40 to 79 years compared with similar-aged non-Hispanic whites. MA prevalence was 28.8% in persons with previously diagnosed diabetes, 16.0% in those with hypertension, and 5.1% in those without diabetes, hypertension, cardiovascular disease, or elevated serum creatinine levels. In adults aged 40+ years, after excluding persons with clinical proteinuria, albuminuria (defined as ACR > or = 30 mg/g) was independently associated with older age, non-Hispanic black and Mexican American ethnicity, diabetes, hypertension, and elevated serum creatinine concentration. MA is common, even among persons without diabetes or hypertension. Age, sex, race/ethnicity, and concomitant disease contribute to the variability of MA prevalence estimates. Copyright 2002 by the National Kidney Foundation, Inc.

To elucidate prognosis and prevalence of chronic renal diseases among proteinuric and/or hematuric subjects found in mass screening, a long-term follow-up study (6.35 years, range 1.03-14.6 years) was conducted on Japanese working men by Yamagata K, Takahashi H, Tomida C, Yamagata Y, Koyama A. Institute of Clinical Medicine, University of Tsukuba, Japan. k-yamaga@md.tsukuba.ac.jp A total of 772 subjects selected from 50,501 Japanese men aged 15-62 years were found to have asymptomatic hematuria (n = 404), concomitant hematuria and proteinuria (n = 155), and proteinuria (n = 213) during their annual urine examination and five consecutive urinalyses. Hematuria patients showed significant improvements in urinary abnormalities as compared with both hematuria/proteinuria and proteinuria patients. Both hematuria/proteinuria patients with normotension and
hematuria/proteinuria patients aged under 40 years showed significant improvements. During the follow-up period, 9.5% of the hematuria patients became hematuric/proteinuric. Hematuria/proteinuria patients had the highest risk of developing renal insufficiency. The presence of hypertension at detection of urinary abnormalities did not affect the renal function; however, if proteinuria appeared after the age of 40 years, these patients had a higher risk of developing renal insufficiency. The incidence of IgA nephropathy in the present subjects was as high as 143 cases per 1 million per year. Detailed follow-up and definitive diagnosis of asymptomatic urinary abnormalities may raise the prevalence of IgA nephropathy worldwide. Copyright 2002 S. Karger AG, Basel.

The incidence of asymptomatic bacteriuria is reported as 2-14% during pregnancy. Fetal and maternal complications like acute pyelonephritis, hypertension, anemia, preterm labor, low-birth-weight infants and intrauterine growth retardation can be expected. The purpose of this study was to determine the incidence of asymptomatic bacteriuria during pregnancy and its relation to pregnancy complications. The study involved 270 pregnant women up to 32 gestational weeks during a 9-month period. At the initial visit, they were screened with urine culture in order to detect asymptomatic bacteriuria. A control group was formed in a retrospective manner from the first day of the study with 186 pregnant women who delivered in our clinic and who were not screened for asymptomatic bacteriuria. The incidence of asymptomatic bacteriuria was 9.31%. Escherichia coli accounted for 79%, which was the most frequent of the isolates. We observed recurrence and had to apply treatment again to 21.7% of the women. The sensitivity, specificity, positive predictive and negative predictive values of leucocyturia as a screening test for asymptomatic bacteriuria were 91.3%, 83.6%, 45.6% and 98.5%,
respectively. We diagnosed preterm labor in six of 23 (26%) with asymptomatic bacteriuria and 16 in 163 (9.3%) women in the urine culture negative group. The ratio acute pyelonephritis in the group which was routinely screened and treated for asymptomatic bacteriuria was 0.5% while the prevalence was 2.1% in the nonscreened group. Considering the relatively high incidence of asymptomatic bacteriuria during pregnancy and the relevant complications, we propose to screen and treat asymptomatic bacteriuria routinely in all pregnant women.