standard transthoracic echocardiography. Carotid intima media thickness and strain were assessed using B-mode ultrasound. Blood pressure was assessed with 24 hour ambulatory monitoring.
Results: Among the 178 adolescents with T2D who completed cardiovascular imaging and psychological assessments, 64% were female, the mean BMI Z-score was 2.5 ± 0.8, and the HbA1c was 9.4 ± 2.6%. The average K6 score was 7.3 ± 4.9, and 15% (n=26) of the adolescents screened positive for severe mental illness as shown in Table 1. Spearman's correlation coefficient revealed no association between either measure of stress and all measures of LV diastolic function, carotid intima media thickness or ambulatory blood pressure.
Conclusion: Among adolescents living with T2D, we did not observe an association between various measures of stress and either LV diastolic function, carotid artery thickness/stiffness or hypertension.

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Nutritional Rickets in Adolescent East African Refugees: A Case Report

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Background: Rickets is a pediatric medical condition characterized by inadequate bone mineralization with potentially serious outcomes. The most common cause is nutritional vitamin D and/or calcium deficiency, and the incidence is disproportionately higher among refugee children. The mainstay of treatment is dietary supplementation.
Case: We report two cases of severe nutritional rickets in adolescent East African refugees. Case-1 presented with bilateral genu valgum deformity, and case-2 was identified incidentally on bloodwork. Radiography in case-1 depicted markedly elevated femorotibial angles with no rickets-specific bone findings, and case-2 showed non-specific bilateral knee sclerosis. Initial bloodwork found calcium levels of 1.84 and 1.38 mmol/L (normal 2.10-2.70 mmol/L), 25-hydroxyvitamin D of 14.5 and 11.1 nmol/L (50-75.9 nmol/L), alkaline phosphatase of 432 u/L (70-230 u/L) and 489 u/L (105 − 420 u/L), and parathyroid hormone of 55.9 and 41.3 pmol/L (2.3-9.3 pmol/L). Both patients described low calcium diets, and relied on government-funded programs for medication coverage since arriving in Canada two years prior. These initiatives function as bridging options for newcomers, thus support is limited to 12 months, and case-2 discontinued vitamin D supplementation secondary to cost after coverage expired. Treatment with cholecalciferol, calcitriol and calcium led to the normalization of laboratory values in both cases.
Conclusions: Rickets is a largely preventable global health issue with important implications. This report identifies refugees as an at-risk group and highlights an urgent need for evaluation and follow-up of potential vitamin D and calcium deficiency, improved dietary counseling, and consistent prescription coverage programs upon arrival to Canada.

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Progesterone Therapy Use and Safety in Male to Female Transgender Patients

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Background: The role of progesterone therapy for male to female (MTF) transgender patients is controversial. The data regarding progesterone therapy in this population is limited.
Methods: A retrospective analysis of hormone therapy regimens in all MTF patients presenting with at least one lab follow-up appointment after consultation between July 1, 2014, and July 2019 was conducted. 100 mg micronized progesterone was prescribed when a patient specifically requested this or expressed dissatisfaction with feminization and/or breast development.
Results: 190 cases were reviewed with mean consult age of 31.6 years and mean follow-up time of 28.8 months. 26.8% received progesterone with a median age of 29.3 years. Treatment was started after a mean of 12.7 months on estradiol therapy with a mean follow-up of 14.3 months on therapy. 15.6% discontinued treatment, 9.8% due to no benefit and 5.8% due to low mood. An additional patient reported skin changes for total adverse reaction rate of 7.8%. 17.6% had documented reports of benefit with 11.8% reporting benefit in breast development and 5.8% reporting enhanced mood.
Conclusions: The majority of patients in our study did not require progesterone therapy. The use of progesterone therapy was generally well tolerated and was of benefit to some who received it. Further studies are needed to better understand progesterone therapy in this population.

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Testosterone Deficiency in Men With Cystic Fibrosis

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Cystic fibrosis (CF) is an autosomal recessive pulmonary disorder with multiple endocrine effects. This study aims to characterize the prevalence of biochemical testosterone deficiency and examine the relationship between testosterone levels and clinical characteristics. This is a retrospective study of 345 adult male CF patients. Descriptive analytics were used to analyze patterns of testosterone deficiency. Relationships between testosterone and clinical parameters were compared using chi-square and Mann-Whitney tests. Univariable models using generalized estimating equations were utilized looking at visit-level testosterone measurements and various clinical parameters. A p-value <0.05 was considered significant. Testosterone deficiency was seen in 10.7% of the study population. Median age was higher amongst those with low bioavailable testosterone (50 vs 33, $p<0.0001$) and femoral neck bone mineral density (BMD) (g/cm^2) was lower (0.91 vs 0.97, $p=0.04$). Lower forced expiratory volume (FEV1) was associated with an increased incidence of low bioavailable testosterone (OR 1.14, 95% CI: 1.02-1.27, $p=0.02$). Individuals with low bioavailable testosterone were more likely to take systemic steroids (OR 3.21, 95% CI: 2.03-5.09, $p<0.0001$), be hospitalized (OR 2.55, 95% CI: 1.42-4.59, $p=0.0017$), or to die (OR 2.16, 95% CI: 1.09-4.24, $p=0.026$). There was no statistically significant difference when comparing pancreatic status, prevalence of liver disease or body mass index. Low bioavailable testosterone was observed in 10% of male CF patients. There was an association between low bioavailable testosterone and increased age, low femoral neck BMD, low FEVI, systemic steroid use, hospitalization and death.

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The Lipid Profile of Individuals With the APOE c.T137C:p.L46P Mutation

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Background: Certain variants of apolipoprotein (apo) E, encoded by the APOE gene, have been associated with lipid disorders. Previously, there has been contradictory evidence regarding the