located in the suprachiasmatic nucleus. The main Zeitgeber for the GIT is the time of food consumption. Recently there has been increased interest in food timing with late dinner impacting diabetes control and obesity disorders associated with metabolic syndrome where gut leakage and gut derived inflammation play a central role.

Methods: We recruited 22 patients – 12 day workers and 10 night shift workers (7 pm - am). All subjects completed a demographic form, had normal blood work, and no history of any GI diseases. Subjects then completed a 7 day diary where they recorded their wake times, bedtimes, and the timing of any food intake. A 24 hour urine collection after sugar challenge was also performed to access intestinal permeability. Regression analysis and Mann-Whitney U were used for comparison between the two groups.

Results: There was no significant difference in age, gender, or BMI between the two groups. Intestinal permeability was not significantly different between day workers vs night workers, either by 5 hour Lactulose/Mannitol (L/M) Ratio or 24 hour Sucrose excretion - 0.09 ± 0.09 vs 0.08 ± 0.13 (p=0.86) and 0.87 ± 0.61 vs 0.67 (p=0.47), respectively. However, when examining the interval of dinner to bedtime a shorter interval was significantly associated with increased 24 hour sucroseuria: R=0.52, R²=0.27, p<0.01. LM ratio was not significantly associated with intestinal permeability; (p=0.16). Wake to breakfast time was also not significantly associated with either 5 hr LM ratio or 24 hr Sucrose. (p value is 0.80 and 0.40, respectively.

Conclusion: A short dinner to bedtime interval was associated with increased whole gut intestinal permeability by 24 hour urinary sucrose. Additional studies are warranted to determine if a short dinner to bedtime interval leaker gut is associated with: (1) gut derived inflammation/metabolic syndrome and weight gain; (2) is worsening esophageal permeability that may contribute to GERD; and (3) if altered food timing causes circadian disruption in the GIT which could impacting tight junction protein expression or function.

Short Dinner to Bedtime Interval is Associated with Increased Intestinal Permeability

**Table 1. Initial lactic acid levels at presentation**

<table>
<thead>
<tr>
<th>Lactic acid levels</th>
<th>0 – 2 mmol/L</th>
<th>2 – 4 mmol/L</th>
<th>&gt;4 mmol/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of patients</td>
<td>71%</td>
<td>14.5%</td>
<td>14.5%</td>
</tr>
</tbody>
</table>

**Table 2. Presenting complaints and confirmation of diagnosis**

<table>
<thead>
<tr>
<th>Confirmation of diagnosis</th>
<th>CT Abdomen with contrast</th>
<th>CT angiography of abdomen</th>
<th>Endoscopy</th>
<th>Interventional Angiogram</th>
<th>Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of patients</td>
<td>46.8%</td>
<td>13.7%</td>
<td>28.2%</td>
<td>4.8%</td>
<td>6.5%</td>
</tr>
</tbody>
</table>

**Table 3. Presenting complaints**

<table>
<thead>
<tr>
<th>Presenting complaints</th>
<th>Abdominal pain (AP)</th>
<th>Bloody Diarrhea (BD)</th>
<th>Both AP and BD</th>
<th>Non specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of patients</td>
<td>50%</td>
<td>8.9%</td>
<td>29%</td>
<td>12.1%</td>
</tr>
</tbody>
</table>

**Abstract 2393**

Does a Normal Lactic Acid Levels at Initial Presentation Rules out Intestinal Ischemia?

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**Introduction:** Acute Intestinal ischemia (AI) accounts for approximately 1% of acute abdomen hospitalizations and occurs in 1 in 1000 patients presenting to emergency rooms. The early identification and diagnosis is challenging because early symptoms are non-specific leading to high mortality rates. Any diagnostic delay contributes to poor patient outcomes and increases the mortality. Various studies have shown that the normal lactic acid level at initial presentation should not exclude the diagnosis of AII as it might be normal or minimally elevated. The increased lactic acid levels in AII might indicate poor prognosis secondary to dead bowel. In this study, we plan to investigate the association of initial lactic acid level and AII.

**Methods:** This is a retrospective chart review at NYU Lutheran Medical Center from January 2010 to May 2015. The charts with the diagnosis of AII using the ICD 9 codes were reviewed. The patients with AII who were older than 18 years were included in the study. Pregnant females and patients with incomplete data were excluded. Information regarding demographics, gender, ethnicity, vital signs, radiological findings, lactic acid levels and surgical pathology were collected.

**Results:** A total of 124 patients were included in the study with mean age of 74 years (range 20-95). 49 patients (39.5%) were males and 75 patients (60.5%) were females. Of these 124 patients, 62 patients (50%) presented with abdominal pain, 11 patients (9%) with bloody diarrhea, 36 patients (29%) with both abdominal pain and bloody diarrhea and 15 patients (12%) had non-specific symptoms. Eighty eight patients (71%) had lactic acid levels of less than 2 mmol/L, 18 patients (14.5%) had between 2-4 mmol/L and 18 patients (14.5%) had > 4mmol/L. The diagnosis of AII was confirmed by Computed tomography (CT) of abdomen with contrast in 58 patients (46.6%), 17 patients (13.7%) by CT angiography of abdomen, 35 patients (28.2%) by endoscopy, 6 patients (4.8%) by interventional angiogram and 8 patients (6.5%) by surgery.

**Conclusion:** The results of this limited study (due to sample size) suggest that normal lactic acid levels at initial presentation should not exclude the diagnosis of AII. There should be low threshold to initiate advanced diagnostic modalities when the suspicion is high for AII along with aggressive resuscitative measures to save bowel and prevent mortality. However, further multi-center studies with larger sample size are needed for further validation of these findings.

**Abstract 2394**

Micronutrient Deficiencies Are Common in Adults With Newly Diagnosed Celiac Disease

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**Introduction:** Micronutrient deficiency analysis is recommended for patients with newly diagnosed celiac disease. Several studies revealing deficiencies in iron, vitamin B12, folate, zinc and copper at diagnosis have been utilized to support testing. However, a recent study of patients diagnosed to be rare. Overall, the data is support testing at diagnosis is limited.

**Methods:** This is a retrospective review of adult patients with newly diagnosed celiac disease from 2000-2014 from the Mayo Clinic electronic medical record and archived in the Mayo Clinic Celiac Disease Registry. Age, sex, body mass index (BMI), and presenting symptoms were collected at the time of diagnosis. Laboratory analysis for tissue transglutaminase IgA (TTG), ferritin, 25-hydroxy vitamin D, and zinc were obtained for one-month prior to three-months after diagnosis. The data were analyzed for absolute number of deficiencies, and the associations of age, sex, BMI, presenting symptoms, and positive TTG with each deficiency response was assessed with logistic regression.

**Results:** 299 adult patients were included, 191 women and 108 men, with mean age of 46.5 years. Among the 218 tested, 66 (30.3%) presented with low ferritin. The only associated factor for ferritin deficiency was a positive TTG at diagnosis (98% vs. 85%, p=0.030). Vitamin D analysis revealed 72/235 (30.6%) presenting deficient. BMI was higher in deficient patients (28.5 vs. 24.6, p<0.001) in both the unadjusted and adjusted models. Zinc deficiency was present in 71/217 (32.7%). Mean age was higher in zinc deficient patients (48.2 vs. 43.2, p=0.025). Stool complaints (67.8 vs. 45.4%, p=0.005) and weight complaints (39.0 vs. 20.8%, p=0.009) were more common in the zinc deficient patients. The differences remained after adjusting for age (p=0.003 and p=0.020, respectively.

**Conclusion:** These data show that among those tested, deficiencies of the studied micronutrients are common in adults with newly diagnosed celiac disease, in contrast to that observed in children. Each deficiency has nutrient-specific associated factors. Overall, these data support ferritin, vitamin D, and zinc analysis in adults presenting with newly diagnosed celiac disease. Future work will compare these data to those in patients with refractory celiac disease.

**Abstract 2395**

Prevalence and Underdiagnosis of Obesity

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**Introduction:** Obesity is a growing epidemic in the USA. Obesity leads to chronic health problems like diabetes, hypertension, coronary artery disease, stroke, osteoarthritis, obstructive sleep apnea and hyperlipidemia. It can also lead to depression. It significantly increases health care costs and is an enormous burden on the national economy. Body mass index and waist circumference are the reliable predictors of obesity, but are under acknowledged by healthcare providers.

**Methods:** A cross sectional study involving 500 patients who visited medicine clinic at union community health center & St Barnabas clinic system from April 1st 2014 to June 30th 2014. We collected