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# Health Maintenance in IBD: All We Need is Vitamins?

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# Outline: Health Maintenance in IBD

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- Potential for immune dysfunction in IBD
- Immunizations
- Osteoporosis
- Cervical cancer and testing (Pap smears)\*
- Skin cancer
- Vitamins
- Summary health maintenance recommendations



\*For women only

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# Immune Dysfunction



# Immune Dysfunction

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- Patients with inflammatory bowel disease (IBD) might be at increased risk for infections or malignancies
  - Related to the immunosuppressive medications used to treat the disease
  - Related to the underlying altered regulation of the immune system inherent to the disease



# Definition of Immunosuppression

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- Steroids
  - Prednisone
- 6mp or Azathioprine
- Methotrexate
- Biologic medications
  - Cimzia, Humira, Remicade or Tysabri



Sands BE, et al. Inflamm Bowel Dis (10) 5, 677-692.

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# Immunizations



# Importance of Immunizations

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- Can prevent serious adverse events and infections
- No risk of contracting the illness w/ attenuated or killed vaccines
- Important in anyone with a chronic illness, particularly immune mediated disorders
  - Diabetes
  - Asthma
  - Rheumatoid arthritis
  - Inflammatory bowel disease



# Immunization Guidelines in IBD\*

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- Standard recommended immunization scheduled for adults should be adhered to
- At diagnosis, all adults should have review of immunization history, with catch up vaccination given as needed
- Live vaccines should be avoided in patients on immunosuppression



Sands BE, et al. Inflamm Bowel Dis (10) 5, 677-692.

\*Prior to several newly licensed vaccines



# Immunization Guidelines in IBD

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- Patients with chronic immunologic illnesses seem to respond well to vaccines
- Patients do not experience worsened disease activity as a result of immunization
- Killed or inactivated vaccines do **NOT** present a risk of infection to patients on immunomodulators or biologics



Sands BE, et al. Inflamm Bowel Dis (10) 5, 677-692.

# Live Vaccines: Contraindicated with Immunosuppression

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- Anthrax vaccine
- Intranasal influenza
- Measles-Mumps-Rubella (MMR)
- Polio live oral vaccine (OPV)
- Smallpox vaccine
- Tuberculosis BCG vaccine
- Typhoid live oral vaccine
- Varicella
- Zoster
- Yellow fever



# Summary: Immunization in IBD

## Recommend

- Immunization review to determine “catch-up” vaccinations needed
- Seasonal influenza vaccine\*
- Swine flu vaccine\*
- Pneumococcal vaccine
- Standard age appropriate adult immunizations

## Special Considerations

- HPV vaccine
  - For women up to age 26 without prior vaccination
- Varicella vaccine
  - Prior to immunosuppression
- Zoster vaccine
  - >60 years old or
  - Prior to immunosuppression
- Hepatitis A and B vaccine
  - If not already given



\*will be combined into 1 shot in 2010-2011, need the shot rather than nasal spray if on immunosuppression

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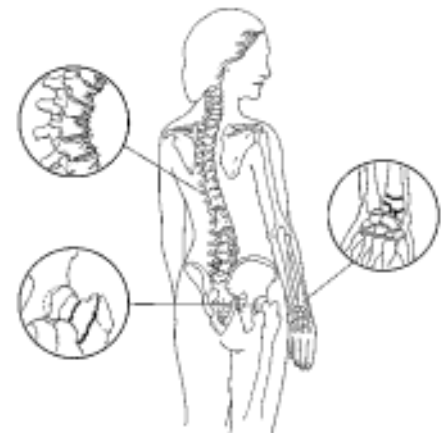
# Osteoporosis



# Osteoporosis

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- A disease in which bones become fragile and more likely to break
- Fractures of the hip and spine are associated with significant morbidity including hospitalizations, major surgery and even death
- Risk Factors in general population
  - Female, thin frame, postmenopausal
  - Family history
  - Smoking and alcohol use
  - Steroid use (prednisone)



# Osteoporosis in IBD

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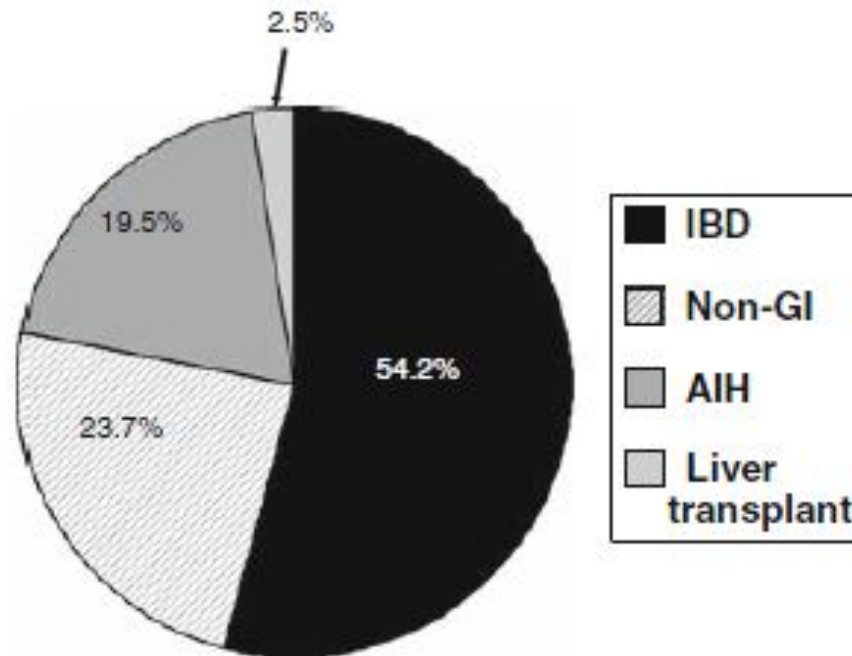
- Prevalence of osteoporosis in IBD is approximately 15%, but is strongly affected by age, being higher in older subjects
- Males and females are at similar risk for osteoporosis and fracture
- Corticosteroid use is the variable most strongly associated with osteoporosis.
- The overall relative risk of fractures is 40% greater than that of the general population and increases with age



# Corticosteroid Use at UNC

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Prevalence of steroid use in GI clinic: 12.9%



Long MD, et al. Dig Dis Sci; 2010.

# Guidelines: Management of Osteoporosis

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- All patients should receive education on the importance of lifestyle changes
  - Weight bearing exercise
  - Quitting smoking
- Preventive measures should be used for anyone on >5 mg prednisone/day for three months
- DEXA scan for those initiating corticosteroids
- Calcium (1500 mg) /Vitamin D (800 IU) and bisphosphonates as needed for treatment
- Corticosteroid dosing in IBD should be kept to a minimum



Gastro 2003;124:795-841

Adler RA, Hochberg MC. Arch Int Med. 2003 Nov 24;163(21):2619-24.

American College of Rheumatology 2001.



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# Cervical Cancer



# Cervical Cancer

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- In 2010 it is estimated that there will be 12,200 new cases of cervical cancer, with 4200 deaths in the United States
- Largely preventable disease via screening: Pap smear
- It is estimated that 50% of women who receive diagnoses of cervical cancer have never been screened



SEER Statistics, available at: <http://seer.cancer.gov>  
ACOG practice bulletin: clinical management guidelines—no. 44, July 2003

# Cervical Dysplasia in IBD

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- Some small studies have shown a higher incidence of abnormal Pap smear in women with IBD compared to healthy controls
  - Increased risk associated with immunosuppression<sup>\*</sup>
- A recent population-based study from Canada showed no association between IBD and abnormal Pap smears
  - There was increased risk in patients on a combination of corticosteroids and immunosuppressants<sup>\*\*</sup>



Kane S, et al. Am J Gastroenterol 2008; 103: 631-636.  
Singh H, et al. Gastro 2009; 136: 451-458.

# Cervical Testing in IBD

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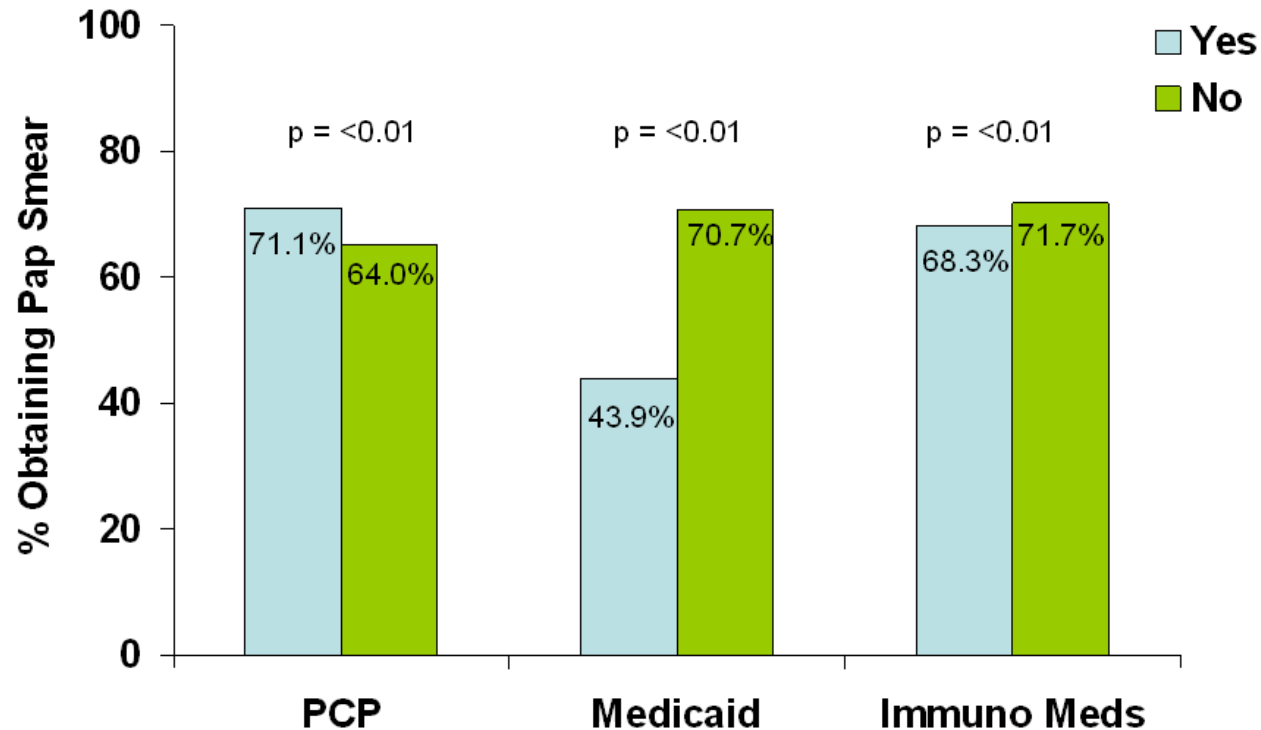
- Patients with IBD have suboptimal rates of cervical testing
- Patients with a primary care provider have improved rates of cervical testing
- Patients on immunosuppression have reduced rates of cervical testing
- Patients with IBD should have routine Pap smears, regardless of whether they choose to receive the HPV vaccine



Long MD, et al. Clin Gastroenterol Hepatol. 2009 Jun; 7 (6): 635-40.

# Cervical Testing in IBD

## Proportion of women with IBD who obtain Pap smear over recommended 36 month interval\*



\*Bivariate comparisons by Pearson's chi square test statistic



Long MD, et al. Clin Gastroenterol Hepatol. 2009 Jun; 7 (6): 635-40.

# ACOG 2010 Guidelines: Pap Smears

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- Women should have their first screening Pap smear at age 21
- Women in their 20's should have a Pap smear every two years (assuming prior Pap smears have been normal)
- Women age 30 and older who have had three consecutive normal Pap smears should have a Pap smear every three years



# ACOG 2010 Guidelines: Pap Smears

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- Women who have had a hysterectomy for non-cancerous reasons do not need a Pap smear unless they have a cervix
- These guidelines need to be followed regardless of whether a woman has had the HPV vaccine



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# Skin Cancer





# Skin Cancer (non-melanoma)

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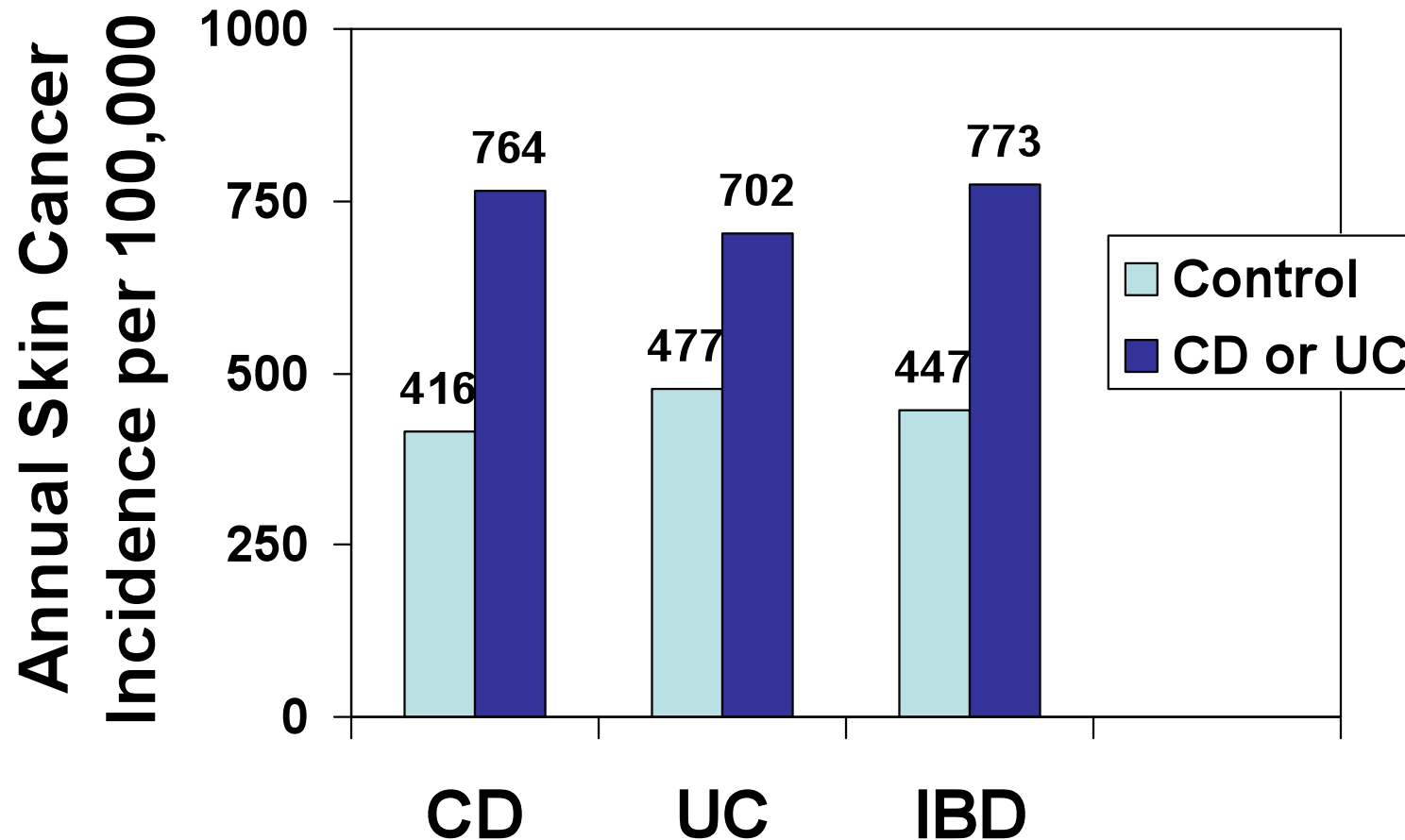
- 1 in 5 Americans develops skin cancer, which accounts for 1/3 of all cancers in the US
  - Categorized into squamous and basal cell carcinoma
- Environmental risk factors for NMSC
  - Ultraviolet light
  - Chemical exposures
- Host risk factors
  - Human papilloma virus
  - Genetic susceptibilities
  - Immunosuppression



Robinson JK. JAMA 2005; 294: 1541-43.  
Leiter U, Garbe C. Adv Exp Med Biol 2008;624:89-103.

# Incidence of Skin Cancer in IBD

Those with IBD 95% (60% in CD, 53% in UC) developed skin cancer



Long MD, et al. Clin Gastro Hepatol. 2010;8:268–274

# Risks of Immunosuppression in IBD

**Recent ( $\leq 90$  days) and persistent ( $\geq 365$  days) medication use and skin cancer in patients with CD or UC\***

	<b>Crohn's disease</b>		<b>Ulcerative Colitis</b>	
	<b>Recent (n=1935)</b>	<b>Persistent (n=1141)</b>	<b>Recent (n=1775)</b>	<b>Persistent (n=1123)</b>
<b>Thiopurine class</b>	<b>OR 3.87 (2.88-5.21)</b>	<b>OR 4.25 (2.81-6.42)</b>	<b>OR 3.09 (2.10-4.54)</b>	<b>OR 4.34 (2.53-7.43)</b>
<b>Methotrexate</b>	<b>OR 1.58 (0.57-4.33)</b>	<b>OR 2.69 (0.63-11.56)</b>	<b>N/A</b>	<b>N/A</b>
<b>Any biologic</b>	<b>OR 2.07 (1.28-3.33)</b>	<b>OR 2.18 (1.07-4.46)</b>	<b>N/A</b>	<b>N/A</b>

\*Adjusted for other classes of medications and Medicaid insurance



Long MD, et al. Clin Gastro Hepatol. 2010;8:268–274

# Skin Cancer Prevention in IBD

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- Primary prevention via sun avoidance, sun protection or minimization of modifiable risk factors for skin cancer
  - Sun protective clothing with a UPF of 30
  - Broad-spectrum sunscreens (UVA and UVB) with a SPF of 30 or greater
  - Reapplication of sunscreen every 2 hours



Long MD, et al. Inflamm Bowel Dis. *In Press*.

# Skin Cancer Prevention in IBD

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- Secondary prevention
  - No current recommendation for annual skin examination in IBD
    - Annual skin examinations are recommended in post-transplant patients on immunosuppression
  - Any skin lesion suspicious for malignancy in a patient with IBD on immunosuppression should be evaluated by a trained dermatologist



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# Vitamins



# Vitamins

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- In patients with active CD, there is the potential for vitamin malabsorption
- Fat soluble vitamins A, D, E have been shown to be decreased in CD patients as compared to controls
- Water soluble vitamins B1, B2, B6 and Folate have been shown to be reduced
- No studies have shown vitamin supplementation to impact disease activity in IBD



Kuroki et al. Dig Dis Sci, 38 (9), 1993: 1614-1618.

# Vitamins

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- Vitamin D depletion is common among healthy adults and children
  - Rates of depletion are even higher among patients with IBD
- Vitamin D has a role in the regulation of the immune system of the gut
- Vitamin D has not been investigated as a treatment for IBD and there are no current guidelines for monitoring Vitamin D status or optimizing stores in IBD patients





# Vitamins

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- Vitamin replacement does not impact course of IBD
- Vitamin D is often low in patients with IBD
  - Sun exposure and supplementation increases levels
- Vitamin B12 is absorbed in the distal part of the small bowel (terminal ileum)
  - Patients with small bowel resection may therefore have reduced levels
  - Supplementation can help with anemia and fatigue



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# Summary



# Summary: Health Maintenance in IBD

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- Review your immunization record with your provider, obtain all appropriate vaccines
- If you have a history of long-standing steroid use, discuss DEXA scan with your provider
  - Calcium (1500 mg) and Vitamin D (800 IU) replacement
- Women should obtain Pap smears at recommended intervals
- Practice preventive measures for skin cancer: sunscreen and protective clothing
  - Show your provider any suspicious skin lesions
- In those with a history of small bowel resection for CD, discuss checking a Vitamin B12 level with your provider

