

Health Maintenance and Screenings in Patients with IBD



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Disclosures

- Consulting Fee: Astellas, Avalo Therapeutics, Bausch, BMS, Braintree Labs, Fresenius Kabi, GI Reviewers, GSK, IBD Educational Group, Iterative Health, Janssen, Pharmacosmos, Pfizer, Sandoz Immunology, Viatrix
- DSMB: Eli Lilly

Objectives

- Identify gaps in achieving appropriate health maintenance among patients with IBD
- Appreciate the increased risk of infections in patients with IBD
- Review the recommended vaccinations and in particular new data on pneumococcal, herpes zoster and respiratory syncytial virus vaccines
- Recommended cancer screenings, as well as other health maintenance issues for patients with IBD slides will not be discussed but slides will be included as part of your handout
- These basic principles can be extrapolated to patients with chronic liver disease and other immune-mediated disorders

ACG Clinical Guideline: Preventive Care in Inflammatory Bowel Disease

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Recent data suggest that inflammatory bowel disease (IBD) patients do not receive preventive services at the same rate as general medical patients. Patients with IBD often consider their gastroenterologist to be the primary provider of care. To improve the care delivered to IBD patients, health maintenance issues need to be co-managed by both the gastroenterologist and primary care team. Gastroenterologists need to explicitly inform the primary care provider of the unique needs of the IBD patient, especially those on immunomodulators and biologics or being considered for such therapy. In particular, documentation of up to date vaccinations are crucial as IBD patients are often treated with long-term immune-suppressive therapies and may be at increased risk for infections, many of which are preventable with vaccinations. Health maintenance issues addressed in this guideline include identification, safety and appropriate timing of vaccinations, screening for osteoporosis, cervical cancer, melanoma and non-melanoma skin cancer as well as identification of depression and anxiety and smoking cessation. To accomplish these health maintenance goals, coordination between the primary care provider, gastroenterology team and other specialists is necessary.

SUPPLEMENTARY MATERIAL is linked to the online version of the paper at <http://www.nature.com/ajg>

Am J Gastroenterol advance online publication, 10 January 2017; doi:10.1038/ajg.2016.537

ECCO Guideline/Consensus Paper

ECCO Guidelines on the Prevention, Diagnosis, and Management of Infections in Inflammatory Bowel Disease



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Annals of Internal Medicine

CLINICAL GUIDELINE

Recommended Adult Immunization Schedule, United States, 2024*

Neil Murthy, MD, MPH, MSJ; A. Patricia Wodi, MD; Veronica V. McNally, JD; Matthew F. Daley, MD; and Sybil Cineas, MD;
on behalf of the Advisory Committee on Immunization Practices†

Murthy N, et al. Ann Intern Med. 2024 Feb;177(2):221-237.



Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2024

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
COVID-19	1 or more doses of updated (2023–2024 Formula) vaccine (See Notes)			
Influenza inactivated (IIV4) or Influenza recombinant (RIV4)	1 dose annually			
Influenza live, attenuated (LAIV4)	1 dose annually			
Respiratory Syncytial Virus (RSV)	Seasonal administration during pregnancy. See Notes.			≥60 years
Tetanus, diphtheria, pertussis (Tdap or Td)	1 dose Tdap each pregnancy; 1 dose Td/Tdap for wound management (see notes)			
	1 dose Tdap, then Td or Tdap booster every 10 years			
Measles, mumps, rubella (MMR)	1 or 2 doses depending on indication (if born in 1957 or later)			For healthcare personnel, see notes
Varicella (VAR)	2 doses (if born in 1980 or later)		2 doses	
Zoster recombinant (RZV)	2 doses for immunocompromising conditions (see notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PPSV23)				See Notes
				See Notes
Hepatitis A (HepA)	2, 3, or 4 doses depending on vaccine			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication, see notes for booster recommendations			
Meningococcal B (MenB)	19 through 23 years	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations		
Haemophilus influenzae type b (Hib)	1 or 3 doses depending on indication			
Mpox				

Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of immunity

Recommended vaccination for adults with an additional risk factor or another indication

Recommended vaccination based on shared clinical decision-making

No recommendation/ Not applicable

Table 2 Recommended Adult Immunization Schedule by Medical Condition or Other Indication, United States, 2024

Always use this table in conjunction with Table 1 and the Notes that follow. Medical conditions or indications are often not mutually exclusive. If multiple medical conditions or indications are present, refer to guidance in all relevant columns. See Notes for medical conditions or indications not listed.

VACCINE	Pregnancy	Immunocompromised (excluding HIV infection)	HIV infection CD4 percentage and count		Men who have sex with men	Asplenia, complement deficiency	Heart or lung disease	Kidney failure, End-stage renal disease or on dialysis	Chronic liver disease; alcoholism*	Diabetes	Healthcare Personnel ^b	
			<15% or <200mm ³	≥15% and ≥200mm ³								
COVID-19		See Notes										
IIV4 or RIV4		1 dose annually										
LAIV4					1 dose annually if age 19–49 years		1 dose annually if age 19–49 years					
RSV	Seasonal administration. See Notes	See Notes					See Notes					
Tdap or Td	Tdap: 1 dose each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 years										
MMR	*											
VAR	*	See Notes										
RZV		See Notes										
HPV	*	3 dose series if indicated										
Pneumococcal												
HepA												
Hep B	See Notes								Age ≥ 60 years			
MenACWY												
MenB												
Hib		HSCT: 3 doses ^c					Asplenia: 1 dose					
Mpox	See Notes				See Notes							See Notes

 Recommended for all adults who lack documentation of vaccination, **OR** lack evidence of immunity
 Not recommended for all adults, but recommended for some adults based on either age **OR** increased risk for or severe outcomes from disease
 Recommended based on shared clinical decision-making
 Recommended for all adults, and additional doses may be necessary based on medical condition or other indications. See Notes.
 Precaution: Might be indicated if benefit of protection outweighs risk of adverse reaction
 Contraindicated or not recommended *Vaccinate after pregnancy, if indicated
 No Guidance/ Not Applicable

a. Precaution for LAIV4 does not apply to alcoholism.

b. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations.








c. Hematopoietic stem cell transplant.

<https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html>



Recommended Adult Immunization Schedule by Medical Condition, 2024

VACCINE	Immunocompromised (excluding HIV infection)
COVID-19	See Notes
IIV4 or RIV4	
LAIV4	
RSV	See Notes
Tdap or Td	
MMR	
VAR	
RZV	See Notes
HPV	3 dose series if indicated
Pneumococcal	
HepA	
Hep B	
MenACWY	
MenB	
Hib	HSCT: 3 doses*
Mpox	

-  Recommended for all adults who lack documentation of vaccination, **OR** lack evidence of immunity
-  Not recommended for all adults, but recommended for some adults based on either age **OR** increased risk for or severe outcomes from disease
-  Recommended based on shared clinical decision-making
-  Recommended for all adults, and additional doses may be necessary based on medical condition or other indications. See Notes.
-  Precaution: Might be indicated if benefit of protection outweighs risk of adverse reaction
-  Contraindicated or not recommended
*Vaccinate after pregnancy, if indicated
-  No Guidance/ Not Applicable

<https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html>



IBD Checklists for Monitoring and Prevention

IBD Checklist for Monitoring & Prevention™



Name: _____
 MR#: _____ D.O.B.: _____

Vaccine-Preventable Illnesses	Date Completed
COVID (SARS-CoV-2) Recommended for any age meeting local vaccine approval criteria, with any mRNA, non-replicating viral vector, or subunit vaccine, regardless of immune suppression.	
Diphtheria and Pertussis (Non-Live Vaccine) Vaccinate with Tdap if not given within the last ten years or if Td ≥ 2 years.	
Hepatitis A (Non-Live Vaccine) Safe to administer to at-risk patients regardless of immunosuppression.	
Hepatitis B (Non-Live Vaccine) Check hepatitis B surface antigen, hepatitis B surface antibody, hepatitis B core antibody before initiating anti-TNF therapy. If non-immune, consider vaccination series with non-live hepatitis B vaccine, 3 doses. If active viral infection or core Ab positive, check PCR and withhold anti-TNF therapy until active infection is excluded or treated appropriately.	
Herpes Zoster (Shingles) (Non-Live Recombinant Vaccine (RZV)) Recommended for all adults >50 yrs old regardless of immune suppression. Consider for patients <18 yrs old based on their risk, particularly on a JAK inhibitor or S1P receptor modulator.	
HPV (Non-Live Vaccine) Recommended for all patients 9-26 yrs old. Consider in patients up to 45 yrs old on a case-by-case basis for those at risk, regardless of immune suppression.	
Influenza (Non-Live Vaccine) Annual dose of inactivated (or quadrivalent) for all patients during flu season. Avoid intranasal live vaccine in immunosuppressed patients.	
Meningococcal Meningitis (Non-Live Vaccine) Vaccinate at-risk patients (college students, military recruits) if not previously vaccinated, regardless of immunosuppression.	
MMR (Live Vaccine) Contraindicated in immunosuppressed patients and those planning to start immunosuppressants within 4 weeks.	
Pneumococcal Pneumonia (Non-Live Vaccine) For adults (19 years or older) who have never received a pneumococcal vaccine or whose vaccination history, administer 1 dose PCV20 or 1 dose PCV15 followed by 1 dose PPSV23 at least 8 weeks later. For adults who previously received PPSV23 but have not received any pneumococcal conjugate vaccine (e.g., PCV13, PCV15, PCV20), administer one dose of PCV13 or PCV20 at least 1 year from PPSV23. For adults or children who received PCV13 but have not received all recommended doses of PPSV23, administer a single dose of PPSV23 ≥ 8 weeks after PCV13. If the patient <65 yrs old at first dose of PPSV23 and still <65 yrs old, administer a 2nd PPSV23 >5 years after 1st PPSV23. At 65 yrs old and >5 years since last PPSV23, administer final PPSV23.	
RSV (Non-Live Vaccine) Abyxvo & Arexvy approved by FDA & CDC for adults >60 years old. A single dose Abyxvo (Bivalent (RSV-A and -B)) and Arexvy (Bivalent (RSV-A) plus adjuvant) is safe for patients on immune therapies. In pregnancy, administer Abyxvo during weeks 32-36. Parents should consult with their pediatrician to determine if their infant/toddler should receive RSV monoclonal antibody (nirsevimab/palivizumab).	
Varicella (Chicken Pox) (Live Vaccine) Check for varicella zoster virus IgG. If negative, consider vaccination for patients not on immunosuppressants or planning to start immunosuppressants within 4 weeks of vaccination.	

Bone Health	Date Completed
Bone Density Assessment Assess bone density if the following conditions are present: 1) Steroid use >3 months 2) Inactive disease but past chronic steroid use of at least 1 year within the past 2 years 3) Inactive disease but maternal history of osteoporosis 4) Inactive disease but malnourished or very thin 5) Inactive disease but amenorrheic 6) Post-menopausal women, regardless of disease status.	
Calcium & Vitamin D Prescription Co-prescription of calcium and vitamin D tablets for all patients with each course of oral corticosteroids and if vitamin D deficient or insufficient (25(OH) D<40 ng/mL).	
Vitamin D 25-OH Level Serial monitoring of vitamin D levels, supplement if deficient.	

REFERENCES
<https://www.cdc.gov/spehs/ibdp/skin-screening-pdq> accessed 4/27/2021
<https://www.cdc.gov/spehs/ibdp/ibdp-checklist-recommendations.html> accessed 4/27/2021
<https://www.acog.org/clinical/immunosuppression> accessed 4/27/2021
 Rubin DT, et al. ACOG Clinical Guidelines: Ulcerative Colitis in Adults. Am J Gastroenterol. 2019; Mar;114(3):384-413
 Dooling KL, Guo A, Patel M, et al. Recommendations of the Advisory Committee on Immunization Practices for Use of Herpes Zoster Vaccines. MMWR Morbidity and Weekly Report. 2016. Jan. 20(17):703-108
 Rubin, L.G., et al. 2013 OSA Clinical Practice Guideline for Vaccination of the Immunocompromised Host. Clin Infectious Diseases. Dec 2013.
<https://www.medicare.com/pain-score-venous-thromboembolism-2005>, accessed Feb 9, 2020

Version 4, Updated February 1, 2024

Therapy-Related Testing	Date Completed
Mesalamines/5-ASAs Annual renal function monitoring while on therapy. For sulfasalazine, additional monitoring of CBC and LFTs should be considered.	
Corticosteroids - Also See Bone Health Document plan and use of corticosteroid-sparing therapy. Consider ophthalmology exam.	
Thiopurines TPMT, CBC, and liver function prior to initiating therapy. Routine CBC and liver function monitoring while on therapy. Consider MUDP15 polymorphism prior to dosing. Annual skin check and annual Pap smears should be performed.	
Methotrexate CBC, liver, and renal function prior to initiating therapy. Routine CBC, liver, and renal function monitoring while on therapy.	
S1P Receptor Modulators 1) Perform ECG/rhythm strip before initiating therapy. 2) CBC, liver function, and BP before initiating therapy and routine monitoring while on therapy. 3) Fundoscopic exam, including the macula, near the start of treatment and periodically while on treatment, specifically in patients with a history of uveitis or macular edema. 4) Skin examinations before or near the start of treatment and periodically while on treatment, specifically in patients with a history of uveitis or macular edema. 5) Confirm documented history of varicella (chicken pox) or documentation of full vaccination course or that VZV IgG is positive. Herpes zoster (shingles) vaccine should be strongly considered. See Varicella information for guidance on live vaccine.	
JAK Inhibitors 1) CBC and liver function at baseline and periodically while on therapy. 2) Tuberculosis (TB) screening with PPD skin testing and/or QuantiFERON-TB Gold assay before initiating therapy. Chest X-ray if high risk and/or indeterminate PPD or QuantiFERON-TB Gold. Perform annual TB risk assessment and consider re-testing if high risk (including travel to endemic region). 3) Baseline fasting lipids and fasting lipid profile 4-12 weeks after initiating therapy. Screen for risks of thrombosis at https://www.medicare.com/capri-score-venous-thromboembolism-2005 . Consider alternative therapies if high risk. 4) Herpes zoster (shingles) vaccine strongly recommended.	
Anti-TNFs 1) Hepatitis B assessment and vaccine. 2) Tuberculosis (TB) screening before initiating therapy with PPD skin testing and/or QuantiFERON-TB Gold assay. Chest X-ray if high risk and/or indeterminate PPD or QuantiFERON-TB Gold. Perform annual TB risk assessment and consider re-testing if high risk (including travel to endemic region). 3) CBC, liver, and renal function before initiating therapy and routine monitoring while on therapy.	
Anti-Integrins 1) Hepatitis B assessment, CBC, liver, and renal function before initiating therapy and routine monitoring while on therapy. 2) Tuberculosis (TB) screening before initiating therapy with PPD skin testing and/or QuantiFERON-TB Gold assay. Chest X-ray if high risk and/or indeterminate PPD or QuantiFERON-TB Gold. Perform annual TB risk assessment and consider re-testing if high risk (including travel to endemic region). 3) CBC, liver, and renal function before initiating therapy and routine monitoring while on therapy, plus additional liver function up to 12 weeks of starting therapy for risankizumab and up to 24 weeks for mirikizumab.	
Anti-IL12/23 & Anti-IL23 1) Hepatitis B assessment and vaccine. 2) Tuberculosis (TB) screening before initiating therapy with PPD skin testing and/or QuantiFERON-TB Gold assay. Chest X-ray if high risk and/or indeterminate PPD or QuantiFERON-TB Gold. Perform annual TB risk assessment and consider re-testing if high risk (including travel to endemic region). 3) CBC, liver, and renal function before initiating therapy and routine monitoring while on therapy, plus additional liver function up to 12 weeks of starting therapy for risankizumab and up to 24 weeks for mirikizumab.	

Cancer Prevention	Date Completed
Colon Cancer If ulcerative colitis beyond the rectum or Crohn's is present in at least 1/3 of the colon, perform surveillance colonoscopies for neoplasia detection after 8 yrs of disease. Interval varies based on risk factors (annually to every 3-5 years). High definition scopes preferred, augmented imaging (NBI or dye spray), and targeted biopsies recommended.	
Cervical Cancer If immunocompromised, perform annual Pap smears. If results of 3 consecutive Paps are normal, perform every 3 yrs. Otherwise follow general population screening guidelines.	
Skin Cancer Annual visual exam of skin by dermatologist if immunocompromised and recommended sun exposure precautions.	

Miscellaneous	Date Completed
Behavioral Health Screen and address mental health co-morbidities.	
Nutritional Assessment Assess for risk of malnutrition and significant weight loss. Check iron levels, vitamin B12, and vitamin D levels. Consider additional micronutrient assessments based on prior surgery or malnutrition.	
Pregnancy If documented starting baby aspirin (81mg-162mg) at week 12 to lower risk of preterm pre-eclampsia.	
Smoking Cessation Discuss at every visit. Refer for counseling.	

<https://www.cdc.gov/vaccines/imz/immunization/ibdp/index.html>, accessed Feb 9, 2020.
 Kucharzik et al. ACOG Preventive Care Guidelines: Am J Gastro 2017
 Farnaby et al. ECCO Guidelines on Infection Prevention/Treatment J Crohn's Colitis 2021
<https://www.cdc.gov/high-risk/index.html> Accessed 10 September 2023

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IBD Checklist for Care Continuity™ Checklist for Transition of Care to Other Providers



Patient's Name: _____ MR#: _____ D.O.B.: _____

Disease Information
Date of diagnosis: (mm/dd/yy)
Disease type: <input type="checkbox"/> CD <input type="checkbox"/> UC <input type="checkbox"/> IBD-Unclassified
Colonoscopy: <input type="checkbox"/> Yes <input type="checkbox"/> No Ileal intubation: <input type="checkbox"/> Yes <input type="checkbox"/> No
Date of first colonoscopy:
Date of most recent exam:
EGD: <input type="checkbox"/> Yes <input type="checkbox"/> No Date(s):
Evidence of IBD: <input type="checkbox"/> Yes <input type="checkbox"/> No
Pathology confirmed: <input type="checkbox"/> Yes <input type="checkbox"/> No
Granulomas present: <input type="checkbox"/> Yes <input type="checkbox"/> No
Small bowel imaging: <input type="checkbox"/> Yes <input type="checkbox"/> No
Date(s) of first imaging study:
Date of most recent exam:
<input type="checkbox"/> SBFT Date:
<input type="checkbox"/> MRE Date:
<input type="checkbox"/> CTE Date:
<input type="checkbox"/> VCE Date:
<input type="checkbox"/> Other: Date:
Montreal Classification (reference table below):
Co-existing immune conditions:
<input type="checkbox"/> PSC <input type="checkbox"/> Primary psoriasis <input type="checkbox"/> Arthritis
<input type="checkbox"/> Ank spon <input type="checkbox"/> Sacroiliitis
Extra-intestinal manifestations:
<input type="checkbox"/> Joint pain <input type="checkbox"/> Skin <input type="checkbox"/> Eye <input type="checkbox"/> Mouth <input type="checkbox"/> Other:
Is the patient's CRP elevated when disease is active:
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown

Family History
IBD: <input type="checkbox"/> Yes <input type="checkbox"/> No Who?
Autoimmune diseases: <input type="checkbox"/> Yes <input type="checkbox"/> No
Who?
Which disease(s):
Colorectal cancer: <input type="checkbox"/> Yes <input type="checkbox"/> No Who?

Surgical History
<input type="checkbox"/> None
CD surgery(s): How many? _____
<input type="checkbox"/> SB <input type="checkbox"/> LB Total length resected (cm): _____
Type of anastomosis: <input type="checkbox"/> End-to-end <input type="checkbox"/> Side-to-side <input type="checkbox"/> Other
Ostomy: <input type="checkbox"/> Ileostomy <input type="checkbox"/> Colostomy <input type="checkbox"/> End <input type="checkbox"/> Loop
Perianal: <input type="checkbox"/> I & D <input type="checkbox"/> Seton <input type="checkbox"/> Other
UC:
<input type="checkbox"/> IPAA <input type="checkbox"/> Subtotal colectomy
<input type="checkbox"/> Total proctocolectomy & end ileostomy <input type="checkbox"/> Other

Previous IBD Therapies		
Include complementary and alternative therapies and diet management		
Therapy	End Date	Reason for D/C

Current IBD Therapies		
Include complementary and alternative therapies and diet management		
Therapy	Start Date	Dose (mg/frequency)

Other Important Information
(C, diff, infections, dysplasia/cancer, etc)

Montreal Classification	
Age at diagnosis	Location
A1 Below 16 y	L1 End
A2 Between 17 and 40 y	L2 Colitis
A3 Above 40 y	L3 Proctitis
	L4 Inflexed upper disease*
Behavior	Extent
B1 Nonstricturing, nonpenetrating	E1 Ulcerative proctitis - Involvement limited to the rectum (that is, proctosigmoiditis if inflammation is distal to the rectosigmoid junction)
B2 Stricturing	E2 Left sided UC (distal UC) - Involvement limited to a proportion of the colon distal to the splenic flexure
B3 Penetrating	E3 Extensive UC (proctitis) - Involvement extends proximal to the splenic flexure
P Perianal disease medium**	

*L4 is a modifier that can be added to L1-L3 when concomitant upper gastrointestinal disease is present.
 **P is added to B1-B3 when concomitant perianal disease is present
 Schwartz J, et al. Gut. 2006; 55:166-703

Version 1.1, Updated 8/15/2017

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IBD Checklists for Monitoring and Prevention

Health Maintenance Checklist



Name: _____

MR#: _____ D.O.B.: _____

Vaccines	Which Patients	How Often
<input type="checkbox"/> COVID-19 vaccine (Moderna, Pfizer, Novavax)	All patients with IBD.	Follow recommendations for the general population.
<input type="checkbox"/> Influenza, Fluzone High Dose, Flublok recombinant, Flud adjuvanted	All adult patients with IBD should receive a standard dose. Those on Anti-TNF monotherapy should receive a high dose influenza vaccine. ¹ Older Adults aged ≥65 should receive the high dose, recombinant or adjuvanted inactivated influenza vaccine. ²	Annually.
<input type="checkbox"/> Pneumococcus (PCV 15, PCV 20 or PPSV23)	All patients ≥19 years age receiving systemic immunosuppression.*	Vaccine naive should receive PCV20 or PCV 15 then 8 weeks apart PPSV23 in one year. Those previously vaccinated with PCV13 and PPSV23 should receive one PCV 20 at least one year since last dose of pneumococcal vaccine. Older adults > 65 should receive a dose of PCV 20.
<input type="checkbox"/> Recombinant Herpes Zoster (RZV) (adjuvanted- non-live) SHINGRIX	All patients with IBD ≥19 years of age. ³	Should receive two dose recombinant herpes zoster vaccine 2–6 months apart.
<input type="checkbox"/> Human Papilloma Virus (HPV) gvalent GARDASIL	All Adults 18–26. Adults 26–45* shared decision who are likely to have a new sexual partner.	Should receive 3 doses series 0, 1–2 months and 6 months.
<input type="checkbox"/> Hepatitis B Heplisav® Engerix® or Recombivax®.	All adult patients with IBD. Universal vaccination is recommended for all adults 19–59. ⁴	Heplisav®: Two dose series (HepB-CpG) at 0 and 1 month. Engerix® or Recombivax®: Three doses series 0, 1, 6-month schedule 3 doses series Hep A-Hep B (Twinrix® at 0, 1, 6-months).
<input type="checkbox"/> Measles, Mumps, and Rubella (MMR) two-dose live vaccine	Patients with IBD not immune to MMR. If immune status is uncertain, obtain immunization history. IgG antibody titer can be checked but not recommended by ACIP. MMR live vaccine should not be given to patients currently on systemic immunosuppressive therapy. ⁵	Should receive a 2-dose series, at least 4 weeks apart.
<input type="checkbox"/> Varicella two-dose live vaccine	Documentation of two doses or varicella vaccine. Serology not recommended by ACIP for evaluation of vaccine induced immunity in those with appropriate documentation. ⁶	All patients who are not immune should receive a 2-dose series, 4–8 weeks apart, ≥4 weeks before immunosuppression, if therapy can be postponed.

Health Maintenance Checklist



Cancer Screening	Which Patients	How Often
<input type="checkbox"/> Colorectal	All IBD patients with extensive colitis (>1/3 of the colon) for ≥8 years should undergo surveillance colonoscopy every 1–3 years, depending on cancer risk.	Patients with IBD with a diagnosis of PSC should undergo colonoscopy, starting at the time of PSC diagnosis, and annually thereafter. Patients with IBD with features that are high-risk for developing colon cancer (i.e. prior history of adenomatous polyps, dysplasia, family history of colon cancer and extensive colitis) should have colonoscopies more frequently than every 3 years.
<input type="checkbox"/> Cervical	All women with IBD who are being treated with systemic immunosuppression.*	Should undergo cervical cancer by cytology annually (if cytology alone) or every 3 years (if HPV negative). ⁷
<input type="checkbox"/> Skin	All IBD patients being treated with systemic immunosuppression.*	Should have annual total body skin exams to screen for skin cancer.
Other Screenings	Which Patients	How Often
<input type="checkbox"/> Mental Health	All	Annual; Depression (PHQ2) and anxiety (GAD7) at baseline, and then annually. Refer for counseling/ therapy when identified.
<input type="checkbox"/> Osteoporosis	All	Screen for osteoporosis by central (hip and spine) DXA scan in all patients with IBD if ANY risk factors for osteoporosis; low BMI, >3 months cumulative steroid exposure, smoker, post-menopausal, hypo-gonadism. Repeat in 5 years and no sooner than 2 years ¹ if initial screen is normal. Vitamin D (800-1000 IU per day) and calcium (1200 mg/day) for Women >65 yo, male > 70 yo (regardless of clinical risk factors).
<input type="checkbox"/> Smoking	All	Refer current smokers for smoking cessation therapy.
<input type="checkbox"/> Latent infections Hepatitis B and tuberculosis	Patients with IBD starting on anti-TNF therapy.	Evaluate prior to starting anti-TNF therapy.
<input type="checkbox"/> Nutritional deficiencies	Patients with IBD annually.	Ferritin, Transferrin %, Vitamin D, Vitamin B12, and Vitamin B6.



What are the Components of Healthcare Maintenance for Patients with IBD?

Health Care Maintenance for the Patient with IBD

- Vaccinations
- Cancer Screening and Surveillance
- Anxiety/Depression Check
- Screening for osteoporosis
- Smoking Cessation
- Nutrition status assessment
- Pre-Advanced Therapy Lab Check
- Lab Monitoring

Why are the Initial Visits with a Patient with IBD so Important?

As many as 70% of patients with IBD will require immunosuppressive therapy at some time in their course

Vaccines

- Vaccines are important and can prevent or reduce the risk of several infectious illnesses
- Advanced therapies put patients at increased risk for infections
- Vaccinate all patients with IBD whenever possible **prior to initiation of immunosuppressive medications** for optimal immune response
- Ideally, required vaccinations should be given to patients at **first office visit (s)**
- Necessary IBD therapy **should never be delayed** to administer vaccines
- Cocoon strategy: Family members of immunosuppressed patients with IBD should be up-to-date with vaccinations
- No evidence that vaccination exacerbates underlying IBD

Non-Live Vaccines

Non-live (inactive/killed) vaccines can be administered to ALL pts, regardless of their immunosuppression status

Centers for Disease Control (CDC), Advisory Committee on Immunization Practices (ACIP) & Infectious Disease Society of America (IDSA)

NON-LIVE VACCINES

- Inactivated influenza
- Pneumococcal
- Recombinant Herpes Zoster (RZV)
- Covid vaccines in US
- Hepatitis A and B
- Human papillomavirus (HPV)
- Respiratory Syncytial Virus (RSV)
- Tetanus, diphtheria, & pertussis (Tdap)
- Meningococcal
- Haemophilus influenzae (HiB)

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- Meningococcal
- Haemophilus influenzae (HiB)

Live Vaccines

- Contraindicated in immunosuppressed patients
- Certain exceptions: Individualized to patients on low level immunosuppression, type of vaccine, necessity of vaccine through shared decision making
- Send your immunosuppressed patients planning international travel to developing countries to ID or traveler's clinic

LIVE VACCINES

- MMR (measles, mumps, rubella)
- Chicken pox (varicella)
- Intranasal Influenza (LAIV4)
- Shingles (Zostavax*)
- Rotavirus
- Yellow fever
- BCG
- Polio (oral)
- Adenovirus
- Typhoid (live)

* No longer available in the US

Health Maintenance Checklist



Name: _____

MR#: _____ D.O.B.: _____

Vaccines	Which Patients	How Often
<input type="checkbox"/> COVID-19 vaccine (Moderna, Pfizer, Novavax)	All patients with IBD.	Follow recommendations for the general population.
<input type="checkbox"/> Influenza, Fluzone High Dose, Flublok recombinant, Fluad adjuvanted	All adult patients with IBD should receive a standard dose. Those on Anti-TNF monotherapy should receive a high dose influenza vaccine. ¹ Older Adults aged ≥65 should receive the high dose, recombinant or adjuvanted inactivated influenza vaccine. ²	Annually.
<input type="checkbox"/> Pneumococcus (PCV 15, PCV 20 or PPSV23)	All patients ≥19 years age receiving systemic immunosuppression.*	Vaccine naive should receive PCV20 or PCV 15 then 8 weeks apart PPSV23 in one year. Those previously vaccinated with PCV13 and PPSV23 should receive one PCV 20 at least one year since last dose of pneumococcal vaccine. Older adults > 65 should receive a dose of PCV 20.
<input type="checkbox"/> Recombinant Herpes Zoster (RZV) (adjuvanted- non-live) SHINGRIX	All patients with IBD ≥19 years of age. ³	Should receive two dose recombinant herpes zoster vaccine 2–6 months apart.
<input type="checkbox"/> Human Papilloma Virus (HPV) gvalent GARDASIL	All Adults 18–26. Adults 26–45* shared decision who are likely to have a new sexual partner.	Should receive 3 doses series 0, 1–2 months and 6 months.
<input type="checkbox"/> Hepatitis B Heplisav® Engerix® or Recombivax®	All adult patients with IBD. Universal vaccination is recommended for all adults 19–59. ⁴	Heplisav®: Two dose series (HepB-CpG) at 0 and 1 month. Engerix® or Recombivax®: Three doses series on 0, 1, 6-month schedule 3 doses series Hep A-Hep B (Twinrix® at 0, 1, 6-months).
<input type="checkbox"/> Measles, Mumps, and Rubella (MMR) two-dose live vaccine	Patients with IBD not immune to MMR. If immune status is uncertain, obtain immunization history. IgG antibody titer can be checked but not recommended by ACIP. MMR live vaccine should not be given to patients currently on systemic immunosuppressive therapy. ⁵	Should receive a 2-dose series, at least 4 weeks apart.
<input type="checkbox"/> Varicella two-dose live vaccine	Documentation of two doses or varicella vaccine. Serology not recommended by ACIP for evaluation of vaccine induced immunity in those with appropriate documentation. ⁶	All patients who are not immune should receive a 2-dose series, 4–8 weeks apart, ≥4 weeks before immunosuppression, if therapy can be postponed.

Health Maintenance Checklist for Adult Patients with IBD



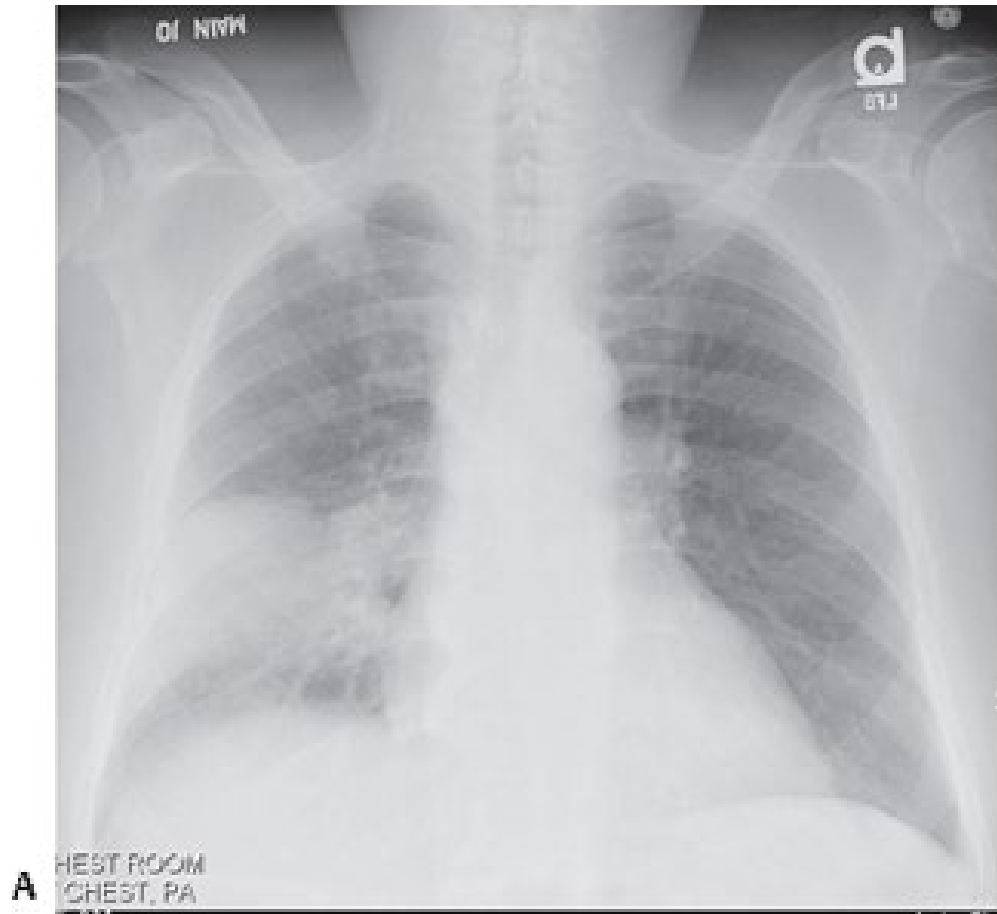
Influenza (non-live) Vaccine

- Patients with IBD have an increased risk for developing influenza
- Immunosuppressive therapies further increase the risk for developing influenza and lead to worse outcomes (higher rates of hospitalization and superimposed pneumonia)
- All patients with IBD should receive the inactivated/non-live influenza vaccine **annually**, regardless of their immunosuppression status
- Timing of influenza vaccine administration **should not be delayed based on the timing of biologic agent dose** administration
- Despite the blunted immune response noted among immunosuppressed patients with IBD, the vaccine still provides some protection

Influenza (non-live) Vaccine

- The most commonly administered inactivated influenza vaccines are the standard dose and the high dose preparations
- **High-dose** inactivated influenza vaccine is administered to all patients 65 and older and leads to higher antibodies in patients with IBD who are on **anti-TNF** therapy
- The **live** attenuated influenza vaccine is contraindicated in patients with IBD who are receiving immunosuppressive medications
- Close contacts (e.g., caregivers, healthcare workers) of severely immunosuppressed persons who require a protected environment should not receive the **live** attenuated influenza vaccine

In IBD clinical registries, what was the most common infectious cause for hospitalization?



Pneumococcal Pneumonia

Health Maintenance Checklist



Name: _____

MR#: _____ D.O.B.: _____

Vaccines	Which Patients	How Often
<input type="checkbox"/> COVID-19 vaccine (Moderna, Pfizer, Novavax)	All patients with IBD.	Follow recommendations for the general population.
<input type="checkbox"/> Influenza, Fluzone High Dose, Flublok recombinant, Fluad adjuvanted	All adult patients with IBD should receive a standard dose. Those on Anti-TNF monotherapy should receive a high dose influenza vaccine. Older Adults aged ≥65 should receive the high dose, recombinant or adjuvanted inactivated influenza vaccine.	Annually.
<input type="checkbox"/> Pneumococcus (PCV 15, PCV 20 or PPSV23)	All patients ≥19 years age receiving systemic immunosuppression.*	Vaccine naïve should receive PCV20 or PCV 15 then 8 weeks apart PPSV23 in one year. Those previously vaccinated with PCV13 and PPSV23 should receive one PCV 20 at least one year since last dose of pneumococcal vaccine. Older adults > 65 should receive a dose of PCV 20.
<input type="checkbox"/> Herpes Zoster (RZV) (adjuvanted- non-live) SHINGRIX	All patients with IBD ≥19 years of age. ³	Should receive two dose recombinant herpes zoster vaccine 2–6 months apart.
<input type="checkbox"/> Human Papilloma Virus (HPV) 9valent GARDASIL	All Adults 18–26. Adults 26–45* shared decision who are likely to have a new sexual partner.	Should receive 3 doses series 0, 1–2 months and 6 months.
<input type="checkbox"/> Hepatitis B Heplisav® Engerix® or Recombivax®	All adult patients with IBD. Universal vaccination is recommended for all adults 19–59. ⁴	Heplisav®: Two dose series (HepB-CpG) at 0 and 1 month. Engerix® or Recombivax®: Three doses series on 0, 1, 6-month schedule 3 doses series Hep A-Hep B (Twinrix® at 0, 1, 6-months).
<input type="checkbox"/> Measles, Mumps, and Rubella (MMR) two-dose live vaccine	Patients with IBD not immune to MMR. If immune status is uncertain, obtain immunization history. IgG antibody titer can be checked but not recommended by ACIP. MMR live vaccine should not be given to patients currently on systemic immunosuppressive therapy. ⁵	Should receive a 2-dose series, at least 4 weeks apart.
<input type="checkbox"/> Varicella two-dose live vaccine	Documentation of two doses or varicella vaccine. Serology not recommended by ACIP for evaluation of vaccine induced immunity in those with appropriate documentation. ⁶	All patients who are not immune should receive a 2-dose series, 4–8 weeks apart, ≥4 weeks before immunosuppression, if therapy can be postponed.

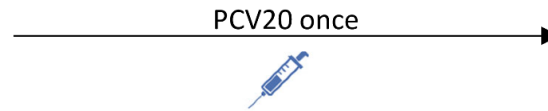
Health Maintenance Checklist for Adult Patients with IBD



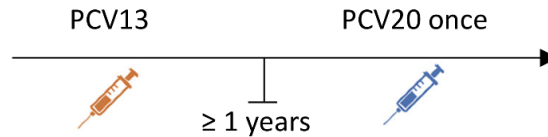
Simplified Pneumococcal Immunization Schedule

Patient with IBD and age 19-64 years on immunosuppressive therapy

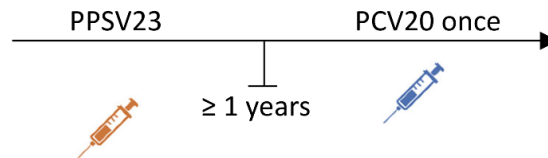
A. Patients not previously vaccinated or whose previous vaccination status is unknown:



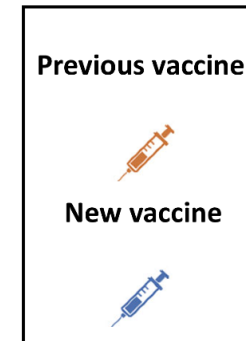
B. Patients previously vaccinated with PCV13:



C. Patients previously vaccinated with PPSV23:



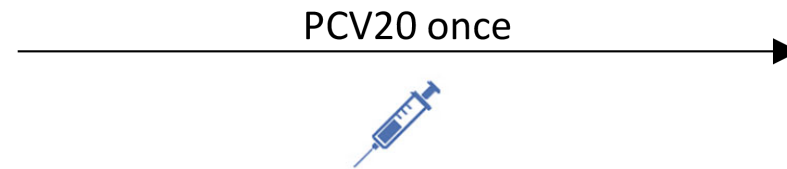
D. Patients previously vaccinated with both PCV13 and PPSV23:



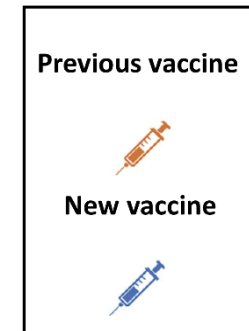
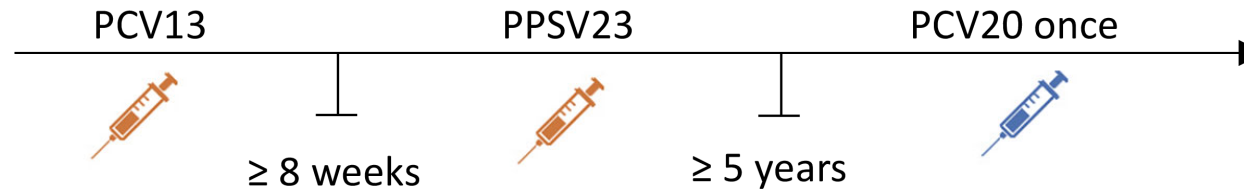
Simplified Pneumococcal Immunization Schedule

Patient with IBD and age ≥ 65 years

A. Patients not previously vaccinated or whose previous vaccination status is unknown:



B. Patients previously vaccinated with both PCV13 and PPSV23:



New Pneumococcal Vaccine PCV 21

- 21 strains are different in PCV 21 and include 11 unique serotypes not in PCV 20
- Many of the cases seen in adults are caused by subtypes not covered in other FDA-approved pneumococcal vaccines
- PCV 21 has greater coverage of the serotypes that cause invasive pneumococcal disease (IPD) which include bacteremic pneumonia, pneumococcal bacteremia and meningitis in adults as compared to PCV 20
- PCV 20 covers up to 58% of invasive disease in adults
- PCV 21 provides much greater protection and covers up to 84% of the serotypes that cause invasive disease

Health Maintenance Checklist

Name: _____

MR#: _____ D.O.B.: _____

Vaccines	Which Patients	How Often
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<input type="checkbox"/> Human Papilloma Virus (HPV) gvalent GARDASIL	All Adults 18–26. Adults 26–45* shared decision who are likely to have a new sexual partner.	Should receive 3 doses series 0, 1–2 months and 6 months.
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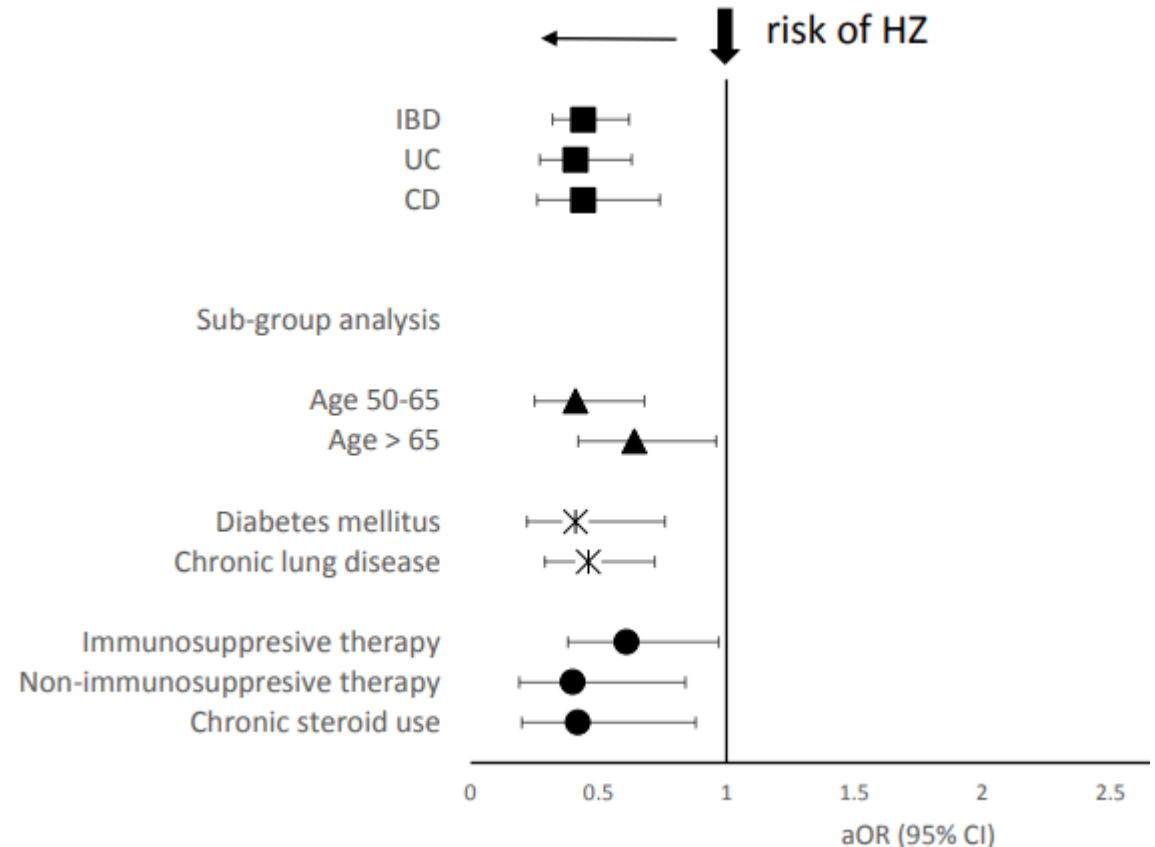
Health Maintenance Checklist for Adult Patients with IBD

Herpes Zoster Vaccines

- There are 2 approved zoster vaccines:
 - Recombinant zoster vaccine (RZV-Shingrix); Administer 2 doses IM (0.5 mL each) at 0 and 2-6 months
 - **Live zoster vaccine (Zostavax) no longer available in USA**
- Initial recommendation: All individuals ≥ 50 years should receive the recombinant zoster vaccine
- In 2021, the FDA approved Shingrix for adults ≥ 19 years who are or will be at an increased risk of shingles because of immunodeficiency or immunosuppression caused by disease or therapy
- Can be administered at 0 and 1-2 months as opposed to 0 and 2-6 months which is the recommendation in patients 50 and older
- Data confirms decreased risk of shingles in patients with IBD who receive RZV
- Cost effective to vaccinate patients with IBD with RZV

Risk of HZ Between the IBD-RZV Cohort and IBD Control Cohort

- 5489 patients in the IBD-RZV cohort (mean age 63.2 +/- 9.1 years old, 57.2% females and 47.2% CD) with a mean follow up of 901 days
- IBD-RZV cohort had a lower risk of HZ (aOR 0.44, 95% CI 0.32-0.62)
- Risk of HZ was lower in patients aged 50-65 years old (aOR 0.41, 95% CI 0.25-0.68) and patients > 65 years old (aOR 0.64, 95% CI 0.42-0.96)
- Risk of HZ was lower in the IBD-RZV cohort on IT (aOR 0.61, 95% CI 0.38-0.97) and chronic corticosteroids (0.42, 95% CI 0.20-0.88)
- No difference in the risk of complicated zoster (aOR 1.35, 95% CI 0.55-3.26) and PHN (aOR 0.94, 95% CI 0.47-1.86) between the IBD-RZV



Cost-effectiveness of an adjuvanted recombinant zoster vaccine in adults with inflammatory bowel disease

Freddy Caldera¹  | Aaron C. Spaulding² | Bijan Borah^{3,4} | Jim Moriarty⁴ | Ye Zhu⁴ | Mary S. Hayney⁵ | Francis A. Farraye⁶

- Vaccination with Recombinant Zoster Vaccine (RZV) was cost effective for all adult patients with Inflammatory Bowel Disease.
- Vaccination with RZV improved quality adjust life years for all patients.
- Vaccination also reduced morbidity from herpes zoster by preventing these events and complications due to herpes zoster.

Health Maintenance Checklist



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MR#: _____ D.O.B.: _____

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<input type="checkbox"/> Human Papilloma Virus (HPV) (HPV) equivalent GARDASIL	All Adults 18–26. Adults 26–45* shared decision who are likely to have a sexual partner.	Should receive 3 doses series 0, 1–2 months and 6 months.
<input type="checkbox"/> Hepatitis B Heplisav® Engerix® or Recombivax®	All adult patients with IBD. Universal vaccination is recommended for all adults 19–59. ⁴	Heplisav®: Two dose series (HepB-CpG) at 0 and 1 month. Engerix® or Recombivax®: Three doses series on 0, 1, 6-month schedule 3 doses series Hep A-Hep B (Twinrix® at 0, 1, 6-months).
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Health Maintenance Checklist for Adult Patients with IBD



Hepatitis B Vaccines

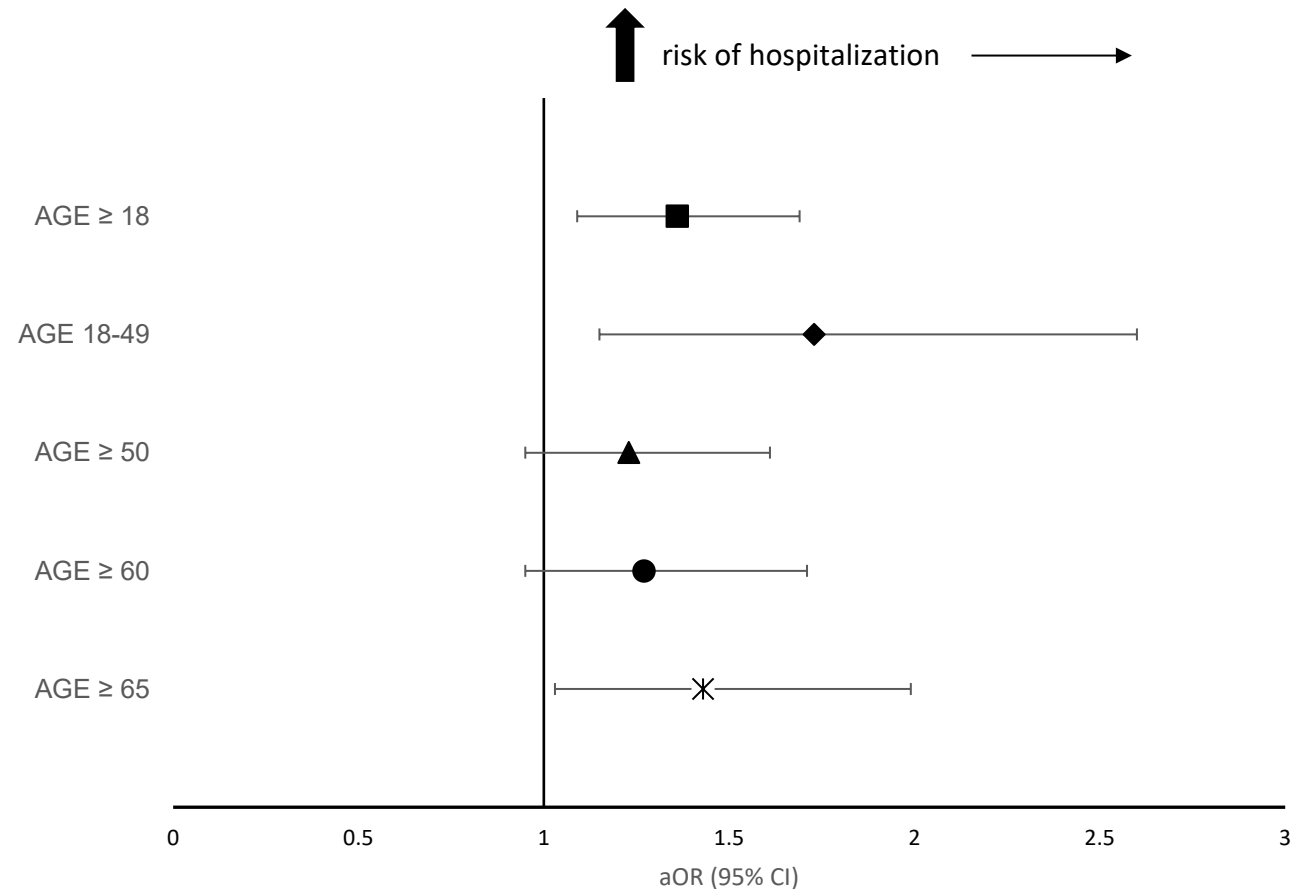
- Four in five adults born before 1991 do not have vaccine induced immunity
- In November 2021, the ACIP recommended universal hepatitis B screening and vaccination for non-immune adults aged 19 to 59 years
- In November 2017, the FDA approved 2-dose Heplisav-B (adjuvant recombinant hepatitis B vaccine), given over 1 month instead of 6 months, for patients >18 years
- Seroprotective anti-HBs after 2 doses of Heplisav-B was 95.4% vs 81.3% after 3 doses of Engerix-B[®]
- Data in patients with IBD show higher efficacy than historical controls receiving Engerix-B
- 3 antigen recombinant hep B vaccine PreHevbrio[®] approved by FDA in December 2021, given at 0, 1 and 6 months

Respiratory Syncytial Virus (RSV) Infection and Vaccines

- RSV is a common viral infection affecting the respiratory tract
- Significant cause of morbidity and mortality, especially in older adults, with risks that are equal to or greater than influenza in this population
- With increased testing, RSV is increasingly recognized as an agent of significant morbidity and mortality in immunocompromised patients
- In Spring 2023, the FDA licensed two RSV vaccines, the RSVPreF3 OA vaccine (Arexvy®) from GSK (adjuvanted) and the RSVpreF vaccine (Abrysvo®) from Pfizer, for patients aged ≥ 60 years; In Summer 2024, FDA approved Moderna mRNA RSV vaccine
- Data from our group has demonstrated that adult patients with IBD are at an increased risk of RSV infection and hospitalizations due to infection
- Consider vaccination with the new RSV vaccine for adult patients with IBD aged 60 years and older with risk factors

Respiratory Syncytial Virus (RSV) Infection and Vaccines

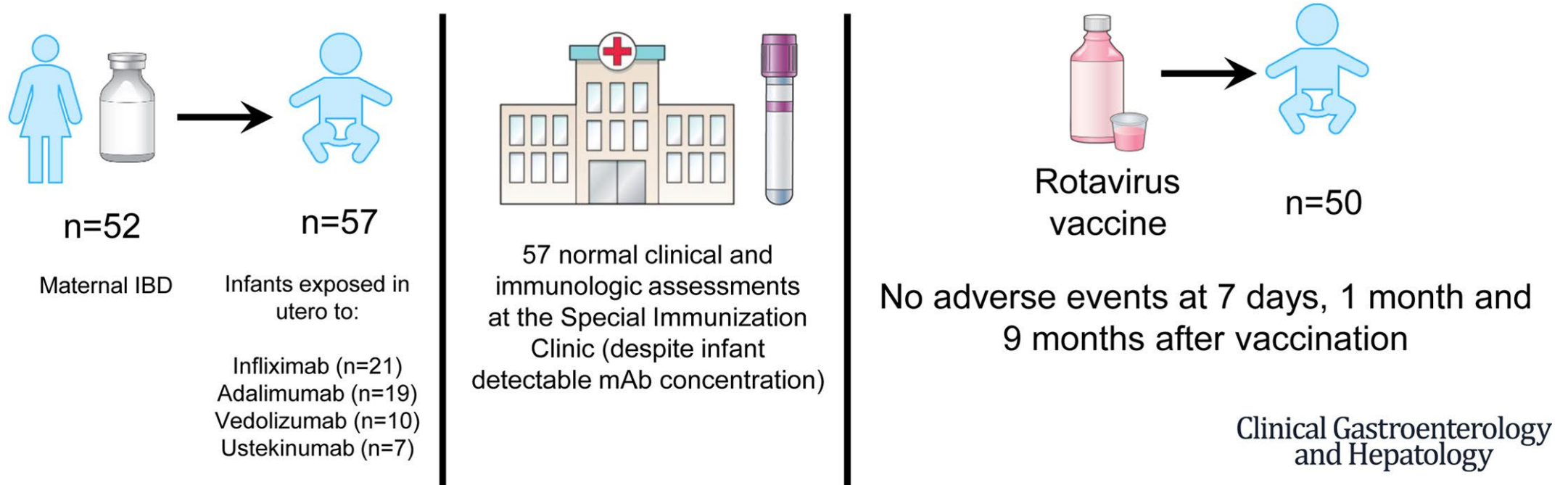
Risk of hospitalization in the IBD RSV cohort compared to the non-IBD RSV cohort after propensity score matching expressed as adjusted odds ratio (aOR) with 95% confidence intervals (CI)



Newest ACIP Recommendations for RSV Vaccination in Adults

- RSV vaccine recommended for all individuals 75 and older
- Shared decision-making for patients 60-74 with risk factors
- Best time to receive is August through October
- Co-administration with other adult vaccines is acceptable
- Administer the Pfizer vaccine to pregnant women or the monoclonal antibody nirsevimab to infants up until eight months of age and for high-risk toddlers aged 8-19 months

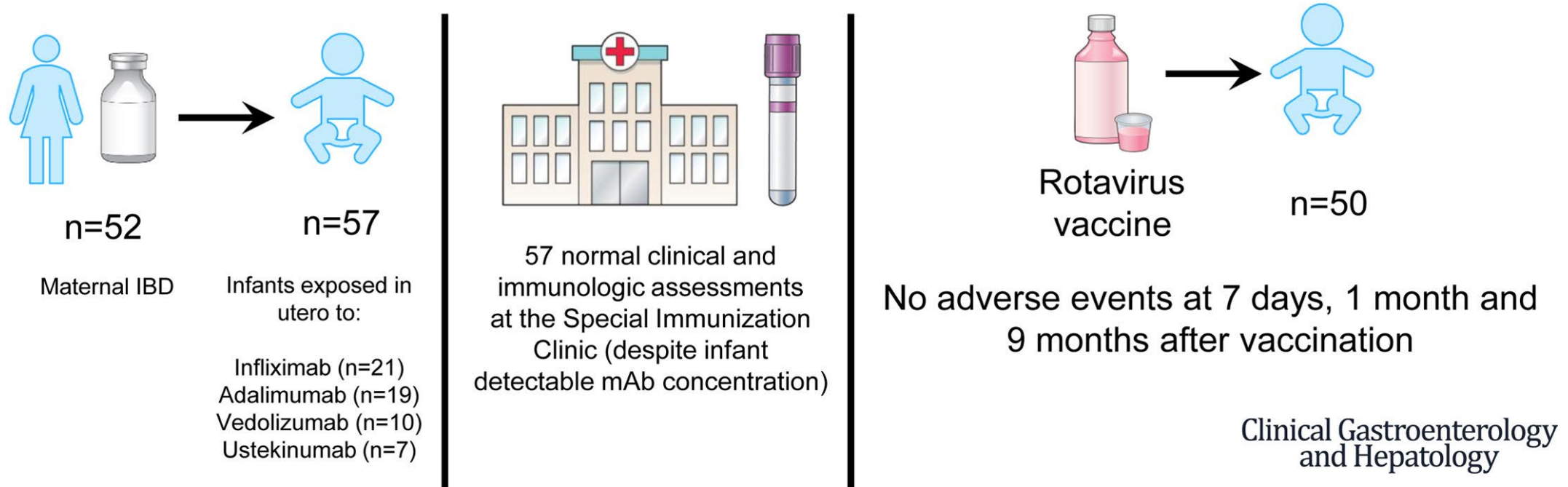
Live Rotavirus Vaccination Appears Low-risk In Infants Born To Mothers With Inflammatory Bowel Disease on Biologics



New Proposed Recommendations on Vaccination in Infants Born to Mothers with IBD

- Infant vaccines should be given on schedule
- We suggest that live rotavirus vaccine may be provided on schedule in children within utero exposure to anti-TNF
- We recommend that live BCG vaccine be avoided in the first 6 months of life in children with in-utero exposure to anti-TNF due to risk of disseminated TB and associated mortality
 - Consider local risk of TB; immunological assessment and measurement of anti-TNF level; shared decision making
- Live vaccines can be given to infants of mothers with IBD who are breastfeeding while on biologics
- Children exposed to JAK or S1P-receptor modulators in utero may receive live vaccines after 1 month of life

Live Rotavirus Vaccination Appears Low-risk In Infants Born To Mothers With Inflammatory Bowel Disease on Biologics



- 57 infants born to 52 mothers with IBD on infliximab (21), adalimumab (19), vedolizumab (10) and ustekinumab (7) in third trimester
- Immune function normal in all infants despite circulating drug levels
- 50 infants received rotavirus vaccine w/o incident

Health Maintenance Checklist



Name: _____

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Health Maintenance Checklist for Adult Patients with IBD



COVID-19 Vaccines

- There are several COVID-19 vaccines that have been used in patients with IBD including mRNA vaccines, inactivated vaccines and viral vector vaccines
 - mRNA vaccines: Pfizer BioNTech and Moderna
 - Adjuvanted spike protein vaccine (non mRNA): Novavax
 - not yet approved for 2024-2025 season
 - Viral vector vaccine: Johnson and Johnson (no longer available in US)
- All patients with IBD should be vaccinated against SARS-CoV-2
- Single dose of 2024-2025 COVID vaccine recommended for those previously vaccinated
- Do not hold treatment for IBD to administer the COVID-19 vaccines

Recommendations for Immunosuppressed Populations

- Previously vaccinated individuals with a primary COVID-19 series should receive 1 dose of updated (2024–2025) mRNA COVID-19 vaccine
- Persons who are moderately or severely immunocompromised have the option to receive one additional dose of updated (2024–2025) mRNA COVID-19 vaccine at least 2 months following the last recommended updated (2024–2025) mRNA COVID-19 vaccine dose

Does Paxlovid Decreases Hospitalization in Unvaccinated Patients with IBD?

- Retrospective cohort study comparing **vaccinated** patients with IBD and Covid infection who received Paxlovid compared to a control group of patients with IBD who did not receive Paxlovid
- Of 29,598 patients with IBD and COVID-19, 532 (1.7%) received Paxlovid (mean age, 55.2 16.2 y; female, 62%)
- Overall rate of hospitalization was as high as 1.8% in patients with IBD who received Paxlovid compared with 5% in the IBD control cohort
- After propensity-score matching, the Paxlovid cohort had a decreased risk of hospitalization (aOR, 0.35; 95% CI, 0.17–0.74) compared with the IBD control cohort
- No patients died, required ICU care, or intubation/respiratory support in the Paxlovid arm while as many as 1.8% of patients in the IBD control arm died

Optimized Immunization Schedule for Patients with IBD

Vaccine	Recommendations
COVID-19 vaccine	Follow Recommendations for general population: New monovalent vaccine available September 2024
Influenza vaccine	All patients Older adults >65 years of age: High dose, recombinant or adjuvant vaccine Those on anti-TNF monotherapy: High dose influenza vaccine
PCV 15 and PPSV 23 or PCV 20	All patients with IBD 19 years of age and older on immunosuppressive therapy
Recombinant Herpes Zoster Vaccine	All patients with IBD 19 years of age and older
Hepatitis B vaccine	All not immune adult patients with IBD not previously vaccinated up to age 60
HPV vaccine series	All adults up to age 26 27-45 (shared decision making)
Respiratory Syncytial Virus (RSV)	Adult patients 60 years of age with risk factors and all > 75

Modified from Caldera F, et al. Am J Gastroenterol. 2020 Sep;115(9):1356-1361.



Health Maintenance Checklist for Adult Patients with IBD

Health Maintenance Checklist

Cancer Screening	Which Patients	How Often
<input type="checkbox"/> Colorectal	All IBD patients with extensive colitis (>1/3 of the colon) for ≥8 years should undergo surveillance colonoscopy every 1–3 years, depending on cancer risk.	Patients with IBD with a diagnosis of PSC should undergo colonoscopy, starting at the time of PSC diagnosis, and annually thereafter. Patients with IBD with features that are high-risk for developing colon cancer (i.e. prior history of adenomatous polyps, dysplasia, family history of colon cancer and extensive colitis) should have colonoscopies more frequently than every 3 years.
<input type="checkbox"/> Cervical	All women with IBD who are being treated with systemic immunosuppression.*	Should undergo cervical cancer by cytology annually (if cytology alone) or every 3 years (if HPV negative). ⁷
<input type="checkbox"/> Skin	All IBD patients being treated with systemic immunosuppression.*	Should have annual total body skin exams to screen for skin cancer.
Other Screenings	Which Patients	How Often
<input type="checkbox"/> Mental Health	All	Annual; Depression (PHQ2) and anxiety (GAD7) at baseline, and then annually. Refer for counseling/ therapy when identified.
<input type="checkbox"/> Osteoporosis	All	Screen for osteoporosis by central (hip and spine) DXA scan in all patients with IBD if ANY risk factors for osteoporosis; low BMI, >3 months cumulative steroid exposure, smoker, post-menopausal, hypo-gonadism. Repeat in 5 years and no sooner than 2 years' if initial screen is normal. Vitamin D (800-1000 IU per day) and calcium (1200 mg/day) for Women >65 yo, male > 70 yo (regardless of clinical risk factors).
<input type="checkbox"/> Smoking	All	Refer current smokers for smoking cessation therapy.
<input type="checkbox"/> Latent infections Hepatitis B and tuberculosis	Patients with IBD starting on anti-TNF therapy.	Evaluate prior to starting anti-TNF therapy.
<input type="checkbox"/> Nutritional deficiencies	Patients with IBD annually.	Ferritin, Transferrin %, Vitamin D, Vitamin B12, and Vitamin B6.

Cancer Screening

Cancer Screening

Colorectal Cancer: All IBD patients with extensive colitis (>1/3 of the colon) for ≥ 8 years should undergo surveillance colonoscopy every 1–3 years, depending on cancer risk;

- IBD patients with a diagnosis of PSC should undergo colonoscopy, starting at the time of PSC diagnosis, and annually thereafter.
- IBD patients with features that are high-risk for developing colon cancer (i.e. prior history of adenomatous polyps, dysplasia, family history of colon cancer and extensive colitis) should have colonoscopies more frequently than every 3 years.

Cervical Cancer: All women with IBD who are being treated with systemic immunosuppression* should undergo cervical cancer by cytology annually (if cytology alone) or every 2 years (if HPV negative).

Skin Cancer: All IBD patients being treated with systemic immunosuppression* should have annual total body skin exams to screen for skin cancer.

Cancer Screening

Cancer Screening

Colorectal Cancer: All IBD patients with extensive colitis (>1/3 of the colon) for ≥ 8 years should undergo surveillance colonoscopy every 1–3 years, depending on cancer risk;

- IBD patients with a diagnosis of PSC should undergo colonoscopy, starting at the time of PSC diagnosis, and annually thereafter.
- IBD patients with features that are high-risk for developing colon cancer (i.e. prior history of adenomatous polyps, dysplasia, family history of colon cancer and extensive colitis) should have colonoscopies more frequently than every 3 years.

Cervical Cancer: All women with IBD who are being treated with systemic immunosuppression* should undergo cervical cancer by cytology annually (if cytology alone) or every 2 years (if HPV negative).

Skin Cancer: All IBD patients being treated with systemic immunosuppression* should have annual total body skin exams to screen for skin cancer.

Colorectal Cancer Screening

CRC screening should start 8 years after onset of disease symptoms

Timing of next colonoscopy when no dysplasia detected at present colonoscopy		
Physicians should err towards the more frequent surveillance category if at least one higher risk factor exists. Timing based on past and ongoing CRC risk factors and mucosal features that may obscure dysplasia.		
1 year	2 or 3 years	5 years
<ul style="list-style-type: none"> • Moderate or severe inflammation (any extent) • PSC • Family history of CRC in first degree relative (FDR) age < 50 • Dense pseudopolyposis • History of invisible dysplasia or higher-risk visible dysplasia < 5 years ago 	<ul style="list-style-type: none"> • Mild inflammation (any extent) • Strong family history of CRC (but no FDR < age 50) • Features of prior severe colitis (moderate pseudopolyps, extensive mucosal scarring) • History of invisible dysplasia or higher-risk visible dysplasia > 5 years ago • History of lower risk visible dysplasia < 5 years ago 	<p>Continuous disease remission since last colonoscopy with mucosal healing on current exam, plus either of:</p> <ul style="list-style-type: none"> • ≥ 2 consecutive exams without dysplasia • Minimal historical colitis extent (ulcerative proctitis or < 1/3 of colon in CD)

Note: Isolated ileal Crohn's disease without colonic inflammation should undergo CRC screening with colonoscopy same as average-risk population. Guidance for endoscopic severity, Simple Endoscopic Score for Crohn's (SES-CD) and Mayo endoscopic score for UC. Moderate-severe: SES-CD ≥ 7/ Mayo 2/3; Mild: SES-CD 3–6/ Mayo 1; No active disease: SES-CD 0–2/ Mayo 0.

Cancer Screening

Cancer Screening

Colorectal Cancer: All IBD patients with extensive colitis (>1/3 of the colon) for ≥ 8 years should undergo surveillance colonoscopy every 1–3 years, depending on cancer risk;

- IBD patients with a diagnosis of PSC should undergo colonoscopy, starting at the time of PSC diagnosis, and annually thereafter.
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Cervical and Skin Cancer Screening



Women with IBD on immunosuppressive therapy (especially thiopurines and JAKs) should undergo annual cervical cancer screening
due to increased risk of cervical dysplasia and neoplasia

ALL patients with IBD should be educated about sun avoidance, sunscreen (SPF ≥ 30), and protective clothing

Patients with IBD should undergo screening for skin cancer independent of the use of biologic therapy

Patients on thiopurines* & JAKs should annual evaluation for NMSC, esp if >50 years of age

**Risk with thiopurines persists after discontinuation of medication*

Health Maintenance Checklist for Adult Patients with IBD

Health Maintenance Checklist

Cancer Screening	Which Patients	How Often
<input type="checkbox"/> Colorectal	All IBD patients with extensive colitis (>1/3 of the colon) for ≥8 years should undergo surveillance colonoscopy every 1–3 years, depending on cancer risk.	Patients with IBD with a diagnosis of PSC should undergo colonoscopy, starting at the time of PSC diagnosis, and annually thereafter. Patients with IBD with features that are high-risk for developing colon cancer (i.e. prior history of adenomatous polyps, dysplasia, family history of colon cancer and extensive colitis) should have colonoscopies more frequently than every 3 years.
<input type="checkbox"/> Cervical	All women with IBD who are being treated with systemic immunosuppression.*	Should undergo cervical cancer by cytology annually (if cytology alone) or every 3 years (if HPV negative). ⁷
<input type="checkbox"/> Skin	All IBD patients being treated with systemic immunosuppression.*	Should have annual total body skin exams to screen for skin cancer.
Other Screenings	Which Patients	How Often
<input type="checkbox"/> Mental Health	All	Annual; Depression (PHQ2) and anxiety (GAD7) at baseline, and then annually. Refer for counseling/ therapy when identified.
<input type="checkbox"/> Osteoporosis	All	Screen for osteoporosis by central (hip and spine) DXA scan in all patients with IBD if ANY risk factors for osteoporosis; low BMI, >3 months cumulative steroid exposure, smoker, post-menopausal, hypo-gonadism. Repeat in 5 years and no sooner than 2 years' if initial screen is normal. Vitamin D (800-1000 IU per day) and calcium (1200 mg/day) for Women >65 yo, male > 70 yo (regardless of clinical risk factors).
<input type="checkbox"/> Smoking	All	Refer current smokers for smoking cessation therapy.
<input type="checkbox"/> Latent infections Hepatitis B and tuberculosis	Patients with IBD starting on anti-TNF therapy.	Evaluate prior to starting anti-TNF therapy.
<input type="checkbox"/> Nutritional deficiencies	Patients with IBD annually.	Ferritin, Transferrin %, Vitamin D, Vitamin B12, and Vitamin B6.

Non-Vaccine Recommendations

Other Protection

Osteoporosis: Screen for osteoporosis by central (hip and spine) DXA scan in all patients with IBD if ANY risk factors for osteoporosis; low BMI, >3 months cumulative steroid exposure, smoker, post-menopausal, hypogonadism. Repeat in 5 years if initial screen is normal.

Depression/Anxiety: Screen all patients with IBD for depression (PHQ9) and anxiety (GAD7) at baseline, and annually. Refer for counseling/therapy when identified.

Smoking: Screen all patients with IBD for smoking status at baseline, and refer current smokers for smoking cessation therapy.

Non-Vaccine Recommendations

Other Protection

Osteoporosis: Screen for osteoporosis by central (hip and spine) DXA scan in all patients with IBD if ANY risk factors for osteoporosis; low BMI, >3 months cumulative steroid exposure, smoker, post-menopausal, hypogonadism. Repeat in 5 years if initial screen is normal.

Depression/Anxiety: Screen all patients with IBD for depression (PHQ9) and anxiety (GAD7) at baseline, and annually. Refer for counseling/therapy when identified.

Smoking: Screen all patients with IBD for smoking status at baseline, and refer current smokers for smoking cessation therapy.

- Pts with IBD are at a higher risk for developing bone disease (CD > UC)
- Risk is higher with cumulative exposure to steroids
- Serial monitoring of vitamin D and supplement if deficient
- Co-prescription of Calcium and vitamin D with steroids

Non-Vaccine Recommendations

Other Protection

Osteoporosis: Screen for osteoporosis by central (hip and spine) DXA scan in all patients with IBD if ANY risk factors for osteoporosis; low BMI, >3 months cumulative steroid exposure, smoker, post-menopausal, hypogonadism. Repeat in 5 years if initial screen is normal.

Depression/Anxiety: Screen all patients with IBD for depression (PHQ9) and anxiety (GAD7) at baseline, and annually. Refer for counseling/therapy when identified.

Smoking: Screen all patients with IBD for smoking status at baseline, and refer current smokers for smoking cessation therapy.

- Up to 25% of patients with IBD have underlying anxiety and/or depression
- Screening is extremely important to ensure appropriate referral and treatment
 - PHQ9 for depression and GAD7 for anxiety
- Annual screening is recommended in patients with IBD

Non-Vaccine Recommendations

Other Protection

Osteoporosis: Screen for osteoporosis by central (hip and spine) DXA scan in all patients with IBD if ANY risk factors for osteoporosis; low BMI, >3 months cumulative steroid exposure, smoker, post-menopausal, hypogonadism. Repeat in 5 years if initial screen is normal.

Depression/Anxiety: Screen all patients with IBD for depression (PHQ9) and anxiety (GAD7) at baseline, and annually. Refer for counseling/therapy when identified.

Smoking: Screen all patients with IBD for smoking status at baseline, and refer current smokers for smoking cessation therapy.

- All patients with IBD who smoke should be counseled to quit

Miscellaneous Recommendations

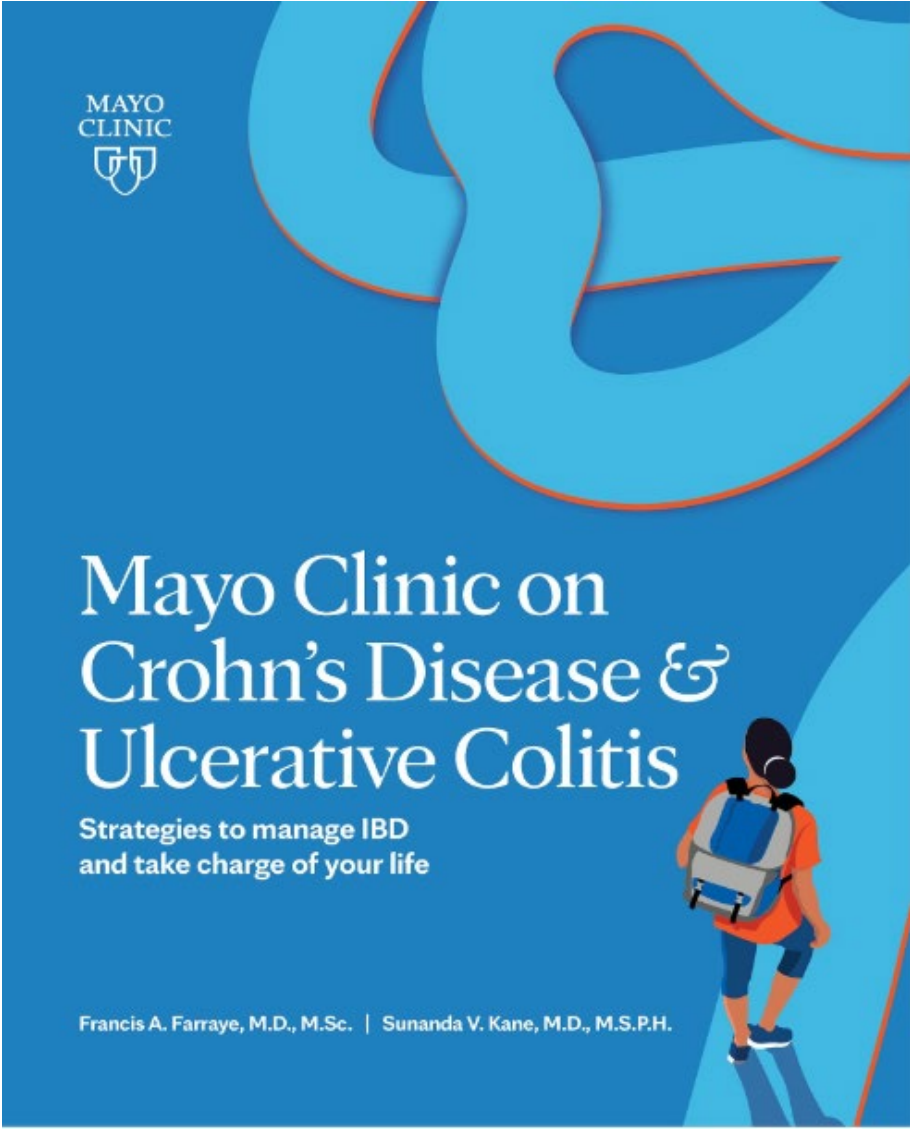
- Malnutrition screen for those at risk (height, weight, BMI at each visit)
- Periodic testing for disease activity (CBC, LFTs, CRP, calprotectin)
- Periodic blood tests on certain medications (methotrexate, thiopurines, JAK inhibitors, etc.) to monitor for adverse side effects
- Hepatitis screen in all patients at initial visit(s)
- TB screen prior to starting certain biologics and periodically thereafter in patients with risk factors

Take Home Points

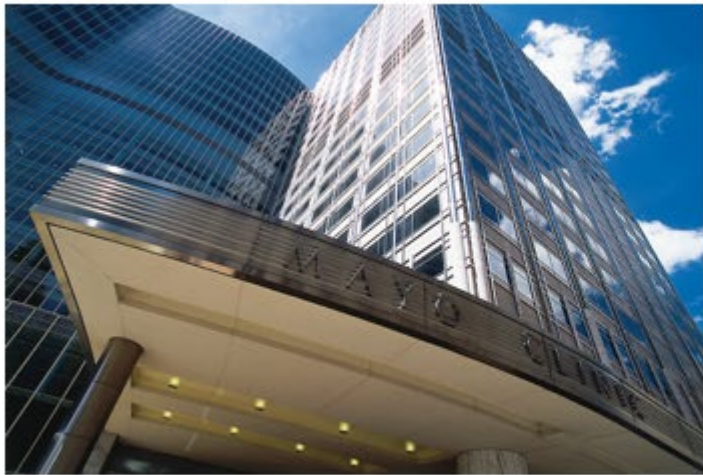
- Subsets of patients with IBD have low immunization rates so ask about vaccination status
- When possible, vaccinate prior to initiation of immunosuppressive agents
- Patients with IBD can mount a response to vaccines, although immunogenicity is diminished in patients on combination therapy of immunomodulator and anti-TNF agents
- IBD disease activity will not be affected by vaccination
- Do not hold treatment for inflammatory bowel disease to administer any inactive vaccines
- Take responsibility to vaccinate your patients with IBD or send your patients to their local pharmacy to receive vaccines

Take Home Points

- Refer patients for colon and skin cancer screening
- Refer women for Pap testing especially those on thiopurines
- Screen for anxiety and depression in your patients with IBD
- Screen patients with risk factors for osteoporosis with DEXA testing
- Counsel all your patients with IBD to stop smoking
- Assess nutritional status periodically
- Use checklists and electronic medical record enhancements in your practice to increase vaccination rates and monitor completion of health



Thank You
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Rochester, Minnesota



Phoenix, Arizona



Jacksonville, Florida