



## NATIONAL HEMOPHILIA FOUNDATION

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MASAC Document #221

### MASAC RECOMMENDATIONS ON ADMINISTRATION OF VACCINES TO INDIVIDUALS WITH BLEEDING DISORDERS

*The following recommendation was approved by the Medical and Scientific Advisory Council (MASAC) on October 5, 2013, and adopted by the NHF Board of Directors on October 6, 2013.*

There has been considerable discussion in the hemophilia community regarding the optimal protocol for the administration of vaccines to individuals with bleeding disorders. Speculation that vaccines may induce the development of inhibitors factor concentrates are not substantiated by unequivocal clinical data. The MASAC Vaccine Working Group has reviewed the available literature, online and in print, and has developed the following recommendations.

#### 1. Centers for Disease Control and Prevention (CDC) Guidelines

It is highly recommended (See MASAC Recommendation #218, page 5, Section G.1 and G.2) [1] that patients with bleeding disorders continue to follow the American Academy of Pediatrics' and CDC's vaccine recommendation route and schedule for their age. These recommendations can be found on the CDC website as follows:

A. Infant Schedule Age (0-6yrs):

<http://www.cdc.gov/vaccines/parents/downloads/parent-ver-sch-0-6yrs.pdf>

B. Child Schedule Age (7-18 yrs):

<http://www.cdc.gov/vaccines/who/teens/downloads/parent-version-schedule-7-18yrs.pdf>

C. Adult Schedule Age (19 yrs and older):

<http://www.cdc.gov/vaccines/schedules/downloads/adult/adult-schedule-easy-read.pdf>

<http://www.cdc.gov/vaccines/schedules/downloads/adult/adult-schedule-easy-read-bw.pdf>

D. Travel Recommendations:

<http://wwwnc.cdc.gov/travel/page/vaccinations.htm>

E. Special Groups:

<http://www.cdc.gov/vaccines/spec-grps/default.htm>

#### 2. Protocol for Administration of Vaccines

MASAC recommends that when giving immunizations, the following procedures be followed:

1. A fine-gauge needle (23 gauge or smaller caliber) should be used. [2]
2. Firm pressure should be applied to the site for at least 2 minutes without rubbing.[2]

3. The patient and/or caregiver should be informed that there is risk of hematoma development at the injection site.[2]
4. Anticipatory guidance should be given regarding when to call the physician or HTC regarding any adverse reactions such as hematoma, fever, warmth, redness.[2]
5. For pain/fever relief [2], avoid aspirin and NSAIDS (such as ibuprofen, naproxen sodium) because of the potential risk of bleeding. Acetaminophen is a safe alternative, but should be used with caution, especially in individuals at risk for liver disease.
6. If the patient is receiving prophylaxis treatment for hemophilia, vaccination could be given within one day afterwards to decrease the risk of developing a hematoma.[2]

### **3. Vaccines that can be given subcutaneously**

There is considerable variation regarding vaccine route of administration (IM vs SQ) among HTC providers (reference CDC data). Many vaccines have not undergone rigorous investigation to demonstrate that SQ administration is as effective as IM administration. Whether or not the potential reduction in intramuscular hematomas from SQ administration outweighs any potential reduction in vaccine efficacy is not known. The vaccines (single vaccines, not in combination with other vaccines) that have been tested and demonstrated to be effective when administered either IM or SQ include:

- A. Pneumococcal polysaccharide (PPSV) [3]
  - B. Polio, inactivated (IPV) [3]
  - C. Hepatitis A [4]
  - D. Hepatitis B [5-7]
4. The safety, efficacy and optimal protocols for administration of other existing, and emerging vaccines will be evaluated by MASAC on an ongoing basis.

### **REFERENCES**

1. MASAC recommendations concerning products licensed for the treatment of hemophilia and other bleeding disorders Revised October 2013. MASAC Document #218.
2. Morbidity and Mortality Weekly Report (MMWR), Center of Disease Control and Prevention, January 28<sup>th</sup> 2011, pages 29-30.
3. Immunization Action Coalition , [www.immunize.org](http://www.immunize.org), [www.vaccineinformation.org](http://www.vaccineinformation.org), <http://www.immunize.org/catg.d/p3085.pdf>
4. Ragni MV, Lusher JM, Koerper MA, Manco-Johnson M, Krouse DS. Safety and immunogenicity of subcutaneous hepatitis A vaccine in children with haemophilia. *Haemophilia* 2000; 6(2): 98-103.
5. Gazengel C, Courouge AM, Torchet MF, Kremp O, Brangier J, Brechot C, Degos F. Use of HBV vaccine in hemophiliacs. *Scand J Haematol* 1984; 40: 323-8
6. Janco RL. Immunogenicity of subcutaneous hepatitis B vaccine in hemophiliacs. *J Pediatr* 1985; 107: 316
7. Zanetti AR, AR, Mannucci PM, Tanzi E, Moroni GA, De Paschale M, Morfini M, Carnelli V, Tirindelli MC, De Biasi R, Ciavarella N, et al. Hepatitis B vaccination of 113 hemophiliacs: lower antibody response in anti-LAV/HTLV-III-positive patients. *Am J Hematol*, 1986; 23: 339-45