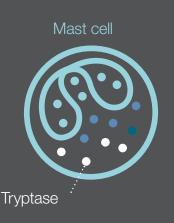
Suspect systemic allergic reaction? Measure tryptase levels twice.

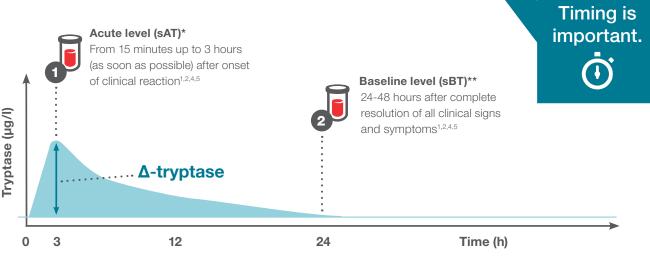




Why tryptase?

Tryptase is a useful biomarker that can aid in systemic allergic reaction investigations^{1,2} as it has been shown to be **released into the circulatory system during anaphylaxis.**^{2,3} Paired acute and baseline tryptase levels aid in differential diagnosis (including mastocytosis or other mast cell disorders), patient management and follow up care.

Whenever you suspect systemic allergic reaction measure tryptase levels twice



*serum Acute Tryptase **serum Baseline Tryptase

If the change (Δ) in tryptase levels (sAT - sBT) is \geq 20% of the individual's sBT + 2 µg/l then mast cell activation is indicated.^{1,4,6-8}

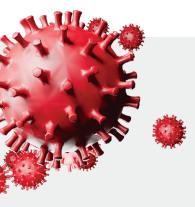
Note: seemingly normal serum tryptase levels do not preclude that an anaphylactic reaction has occurred.^{1-3,7-9} Performing the calculation can help identify possible mast cell activation that might otherwise be missed.^{4,9}



When systemic allergic reaction is suspected, tryptase testing is recommended by global allergy organizations, including WAO, AAAAI/ACAAI, and EAACI^{1-4,6,8,10}

Systemic allergic reaction & COVID-19 vaccines

Although still rare, to date, the incidence rate of anaphylaxis associated with first doses of three major COVID-19 vaccines exceeds the estimated incidence rate of anaphylaxis associated with other types of vaccines (2 to 11.1 per million vs approximately 1 per million).^{5,11-14,16,17}



Guidelines for tryptase testing in suspected COVID-19 vaccine-associated anaphylaxis

Global allergy organizations recommend tryptase testing as **critically important** for accurate diagnosis of COVID-19 vaccine-associated anaphylaxis. Affected patients should be advised to follow-up with a specialist (e.g., allergist, immunologist) to determine if a second dose of COVID-19 vaccine should be given.^{11,12,16-18}

Whenever you suspect systemic allergic reaction measure tryptase levels twice

References

- Valent et al. Definitions, criteria, and global classification of mast cell disorders with special reference to mast cell activation syndromes: a consensus proposal. Int Arch Allergy Immunol. 2012;157(3):215-25.
- Schwartz LB. Diagnostic value of tryptase in anaphylaxis and mastocytosis. *Immunol Allergy Clin North Am*. 2006 Aug;26(3):451-63.
- Lieberman et al. The diagnosis and management of anaphylaxis practice parameter: 2010 update. J Allergy Clin Immunol. 2010 Sep;126(3):477-80.
- Vitte *et al.* Use and Interpretation of Acute and Baseline Tryptase in Perioperative Hypersensitivity and Anaphylaxis. *J Allergy Clin Immunol.* 2021 Mar 18;S2213-2198(21)00315-9. DOI: 10.1016/j.jaip.2021.03.011.
- Schwartz LB, Yunginger JW, Miller JS et al. The time course of appearance and disappearance of human mast cell tryptase in the circulation after anaphylaxis. J Clin Invest. 1989 May;83(5):1551-5.
- Cardona et al. World allergy organization anaphylaxis guidance 2020. World Allergy Organ J. 2020 Oct 30;13.
- Simons FE et al. International consensus on (ICON) anaphylaxis. World Allergy Organ J. 2014 May;30;7(1):9
- Simons FE et al. World Allergy Organization anaphylaxis guidelines: Summary. J Allergy Clin Immunol. 2011 Mar;127(3):587-93.
- Simons FE et al. 2015 update of the evidence base: World Allergy Organization anaphylaxis guidelines. World Allergy Organ J. 2015 Oct 28;8(1):32.
- Muraro et al. Anaphylaxis: guidelines from the European Academy of Allergy and Clinical Immunology. Allergy. 2014 Aug;69(8):1026-45.

- 11. Sokolowska *et al.* EAACI statement on the diagnosis, management, and prevention of severe allergic reactions to COVID-19 vaccines. *Allergy.* 2021 Jan 16.
- 12. Klimek et al. ARIA-EAACI statement on severe allergic reactions to COVID-19 vaccines—an EAACI-ARIA Position Paper. Allergy. 2020 Dec 30.
- Allergic Reactions Including Anaphylaxis After Receipt of the First Dose of Pfizer-BioNTech COVID-19 Vaccine — United States, December 14–23, 2020. MMWR Morb Mortal Wkly Rep 2021; 70:46–51. DOI: http://dx.doi.org/10.15585/mmwr.mm7002e1
- Allergic Reactions Including Anaphylaxis After Receipt of the First Dose of Moderna COVID-19 Vaccine - United States, December 21, 2020–January 10, 2021. MMWR Morb Mortal Wkly Rep 2021; 70:125–129. DOI: http://dx.doi.org/10.15585/mmwr.mm7004e1
- COVID-19 vaccine safety update for Vaxzevria, AstraZeneca AB. :(2021, March 29). European Medicines Agency. https://www.ema.europa.eu/documents/covid-19-vaccine-safety-update/ covid-19-vaccine-safety-update-vaxzevria-previously-covid-19-vaccine-astrazeneca-29march-2021_en.pdf
- Turner et al. COVID-19 vaccine-associated anaphylaxis: A statement of the World Allergy Organization Anaphylaxis Committee. World Allergy Organ J. 2021 Feb;14(2):100517.
- American College of Allergy, Asthma, and Immunology (ACAAI). (2021, March 11). ACAAI Updates to Guidance on Risk of Allergic Reactions to COVID-19 Vaccines. [Press Release]. https://acaai.org/news/acaai-updates-guidance-risk-allergic-reactions-covid-19-vaccines
- US Centers for Disease Control and Prevention (CDC), referred to by AAAAI. (2021, April 8). Lab Tests to Collect Shortly After Severe Allergic Reaction/Anaphylaxis Following COVID-19 Vaccination https://www.cdc.gov/vaccines/covid-19/clinical-considerations/ testing-after-allergic-reaction.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc. gov%2Fvaccines%2Fcovid-19%2Fclinical-considerations%2Fanaphylaxis-management.html

Find more resources at thermofisher.com/measuretryptasetwice

The cleared intended use of ImmunoCAP Tryptase differs in the United States.

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