

IPCRG practice driven answers on COVID-19 and respiratory questions



What is the variation in symptoms for different variants of SARS-CoV-2, why do we see this variation and are there predictors for acute disease severity?

What the research says

The main symptoms of early variants of SARS-CoV-2 were a high temperature, a persistent cough and a loss of smell or altered sense of smell. Over 20 symptoms are now acknowledged as part of the constellation of symptoms of SARS-CoV-2, some of which are common across variants and other which are more likely to be associated with one variant over another.

The reasons for the variation in symptoms profiles is under investigation. There is some suggestion that the Omicron variant is less effective in infecting the cells of lower respiratory tract and so less likely to cause the more severe pneumonia, lung damage and systemic organ damage associated with other variants (Menni et al 2022).

The strongest predictors for a severe COVID-19 disease course include an immunosuppressed state, older age (graded increase in risk with advancing age), multiple pre-existing comorbidities, hypoxia, extensive lung involvement (on imaging), multiple laboratory abnormalities and biomarkers of organ dysfunction (Gallo Main et al 2021).

Symptom-based predictors of the likely severity of COVID-19 illness have proved less useful than risk assessment based on patient characteristics (e.g. immune status) and the presence of comorbid conditions. There is some suggestion that patients presenting with multiple symptoms assessed as severe may be more likely to progress to requiring hospitalization (Sudre et al 2021).

What this means for your clinical practice

- Compared to the Delta variant, the Omicron variant is associated with an increased prevalence of sore throat and a lower prevalence of loss or altered smell and sneezing.
- Individual patient risks should be considered rather than symptoms, although the number of symptoms may be a predictor for hospitalisation. Continue to base risk on individual patient risk characteristics, not severity of symptoms on diagnosis. Conduct a broad assessment that includes pulse oximetry in patient follow up.
- For more information on symptoms among vaccinated patients see our response to *'Are there specific warning symptoms of COVID-19 infection for patients who have received a SARS-CoV-2 vaccination?'* Available at: <https://www.ipcrg.org/resources/search-resources/are-there-specific-warning-symptoms-of-covid-19-infection-for-patients>

- For more information on differentiating COVID-19 illness from other common respiratory illnesses see our response to 'What are the distinguishing features of COVID-19 vs other respiratory illnesses?' Available at: <https://www.ipcrq.org/resources/search-resources/what-are-the-distinguishing-features-of-covid-19-vs-other-respiratory>
- For more information on COVID-19 illness among people with COPD see our response to 'Are patients with COPD at a higher risk of infection with SARS-CoV-2 and are they also more likely to experience a more severe course of illness?' Available at: <https://www.ipcrq.org/resources/search-resources/are-patients-with-copd-at-a-higher-risk-of-infection-with-sars-cov-2-and>
- For more information on COVID-19 illness among people with asthma see our response to 'Are patients with asthma at a higher risk of infection with SARS-CoV-2 and are they also more likely to experience a more severe course of illness?' Available at: <https://www.ipcrq.org/resources/search-resources/are-patients-with-asthma-at-a-higher-risk-of-infection-with-sars-cov-2>

Useful links and supporting references

Gallo Marin B, et al. Predictors of COVID-19 severity: A literature review. Rev Med Virol 2021;31:1–10. Available at: <https://pubmed.ncbi.nlm.nih.gov/32845042/>. Accessed May 2022.

Menni C, et al. Symptom prevalence, duration, and risk of hospital admission in individuals infected with SARS-CoV-2 during period of omicron and delta variant dominance: a prospective observational study from the ZOE COVID Study. Lancet 2022;399:1618–24. Available at: <https://www.thelancet.com/action/showPdf?pii=S0140-6736%2822%2900327-0/> Accessed May 2022.

Sudre C, et al. Symptom clusters in COVID-19 : a potential clinical prediction tool from the COVID Symptom Study app. MedRxiv 2020.06.12.20120956. Sci Adv 2021;7:eabd4177. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7978420/>. Accessed May 2022

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Variation in symptoms by SAR-CoV-2 variants (adapted from Menni et al 2022)

Values estimated from graphical presentation. Orange indicates symptoms occurring at least 10% more frequently with either variant vs the other.

Symptom	Prevalence, %	
	Delta variant	Omicron variant
Runny nose	80	75
Headache	78	74
Sneezing	70	60
Sore throat	60	70
Loss of smell	51	18
Persistent cough	50	48
Altered smell	41	25
Chills or shivers	40	40
Fever	40	35
Unusual joint pains	38	40
Hoarse voice	36	41
Dizzy or light headed	35	32
Eye soreness	31	28
Brain fog	30	28
Unusual muscle pains	28	30
Skipped meals	23	22
Swollen glands	22	22
Chest pain	22	20
Feeling down	20	18
Diarrhoea	20	18
Earache	20	20
Ear ringing	20	18
Abdominal pain	18	18
Nausea	18	18
Delirium	12	12
Skin burning	10	10
Irregular heartbeat	8	8
Shortness of breath	5	5
Rash	4	4
Red welts on face or lips	3	3
Hair loss	2	1
Blistering on feet	2	1

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