

Supplementary Table S1: Potential regional and systemic complications in other organs / organ systems that are associated with viral pathogens causing acute respiratory infection (ARinf)

Specific organ / organ system	Potential complications	Examples of viral pathogens associated with complications
Respiratory tract (regional complications)	Otitis media (1-5)	Influenza B, Rhinovirus, Respiratory Syncytial Virus (RSV), Parainfluenza
	Sinusitis (2, 6)	Rhinovirus, Parainfluenza
	Pharyngitis (2, 3, 5-9)	Influenza A, Influenza B, Rhinovirus, Coronavirus, Enterovirus, Parainfluenza, SARS-CoV-2
	Tonsillitis (9)	Adenovirus
	Pneumonia (2, 6, 10-12)	SARS-CoV-2, Influenza type A and B, Respiratory syncytial virus (RSV), Human Metapneumovirus, Enterovirus, Parainfluenza type 3
	Bronchitis / bronchiolitis (5, 6, 10, 12-16)	SARS-CoV-2, Respiratory syncytial virus (RSV), Human Metapneumovirus, Rhinovirus, Adenovirus, Enterovirus,
	Post-infective bronchial hyperreactivity, asthma exacerbations (1, 17)	Rhinoviruses, Adenovirus
Cardiovascular	Myocarditis (2, 6, 18-22)	SARS-CoV-2, Enterovirus, Parainfluenza, Influenza virus A and B, Adenovirus
	Pericarditis (2, 6, 21-25)	SARS-CoV-2, Rhinovirus, Enterovirus, Parainfluenza
Nervous system	Encephalitis (6, 13, 26)	Adenovirus, Enterovirus
	Meningitis (2, 6, 13)	Enterovirus, Parainfluenza
	Autonomic dysfunction (POTS and IST) (24, 27-29)	SARS-CoV-2
	Cognitive dysfunction (30-33)	SARS-CoV-2
	Post-viral fatigue syndrome (33-36)	Epstein Barr virus, SARS-CoV-2
Renal / bladder	Nephritis (37); Nephrotic Disease (2, 26)	Adenovirus, Parainfluenza, SARS-CoV-2
	Cystitis (26)	Adenovirus
Gastrointestinal	Gastroenteritis (6, 13, 38-40)	Coronavirus, Influenza A, Influenza B, Rhinovirus, Chlamydia pneumoniae, SARS-CoV-2
	Hepatitis (13, 22, 26); Hepatic injury(41)	Adenovirus, Enterovirus, Mycoplasma pneumoniae, SARS-CoV-2
Musculoskeletal	Myositis (42, 43); Rhabdomyolysis (2)	Parainfluenza virus, SARS-CoV-2
	Arthritis (44)	SARS-CoV-2
Psychiatric	Post infective psychiatric disorders e.g. anxiety, depression, insomnia and other sleep disorders) (30, 45, 46)	SARS-CoV-2

POTS: Postural orthostatic tachycardia syndrome; IST: Inappropriate Sinus Tachycardia

Supplementary Table S2: Symptoms of acute respiratory infections (ARinf) (by predominant anatomical regions)

Predominant anatomical region	Symptom
Upper respiratory tract	Blocked/plugged nose ^a
	Runny nose ^a
	Sneezing ^a
	Altered/loss sense of smell ^b
	Altered/loss sense of taste ^b
	Sinus pressure ^a
	Sore/scratchy throat ^b
Hoarseness ^a	
Lower respiratory tract and regional (head / neck region)	Dry cough ^{a*}
	Wet cough (productive) ^b
	Difficulty in breathing ^a
	Fast breathing or shortness of breath ^a
	Chest pain/pressure ^b
	Chest tightness ^a
	Headache ^b
Red / watery / scratchy eyes ^a	
Systemic / whole body / non-respiratory	Fever ^b
	Chills ^b
	Excessive fatigue ^b
	General muscle aches and pains ^b
	Skin rash ^a
	Abdominal pain ^b
	Nausea ^b
	Vomiting ^b
Diarrhoea ^b	
Loss of appetite ^b	

^a: Symptoms that can be associated with both non-infective acute respiratory illness (ARill) and ARinf:

^b: Symptoms that are more indicative of an ARinf

*: Cough can also be an upper respiratory tract symptom (originate above the larynx)

Supplementary Table S3: Viral pathogens causing clinical syndromes of acute respiratory infection (ARinf) in adults (adapted from Traenor J, 2016, Clinical Virology)(47)

Main anatomical classification	Clinical syndromes of ARinf in athletes	Viral pathogens causing clinical syndromes (adults)			Refs
		Common (>25% cases)	Fairly common (5-25% cases)	Rare (<5% cases)	
Predominantly upper respiratory tract	1. Acute rhinitis and / or additional features of rhinosinusitis / rhinopharyngitis *: “Common cold”, “Coryza”, “viral upper respiratory infection”	<ul style="list-style-type: none"> • Rhinovirus 	<ul style="list-style-type: none"> • Enterovirus • Coronavirus • Respiratory syncytial virus 	<ul style="list-style-type: none"> • Influenza Type A (children) • Influenza Type B • Parainfluenza Type 1 • Parainfluenza Type 2 • Parainfluenza Type 3 	(47, 48)
	2. Acute rhinosinusitis / rhinopharyngitis with systemic symptoms / signs **: “Influenza-like”, “flu-like”, “flu”	<ul style="list-style-type: none"> • Influenza Type A • Rhinovirus (children) 	<ul style="list-style-type: none"> • Parainfluenza viruses (children) 	<ul style="list-style-type: none"> • Influenza Type B • Adenovirus • Respiratory syncytial virus • Human metapneumovirus • Coronavirus • Bocavirus 	(49-54)
	3. Acute pharyngitis / tonsillitis (with or without systemic symptoms / signs)		<ul style="list-style-type: none"> • Influenza Type A • Influenza Type B • Parainfluenza Type 1 • Parainfluenza Type 2 • Parainfluenza Type 3 • Rhinovirus • Enterovirus • Adenovirus • Epstein-Barr virus 	<ul style="list-style-type: none"> • Respiratory syncytial virus • Coronavirus • Herpes simplex virus • Cytomegalovirus 	(47, 48)
	4. Acute laryngitis / laryngotracheobronchitis (with or without systemic symptoms / signs) ***: “Croup”	<ul style="list-style-type: none"> • Parainfluenza Type 1 	<ul style="list-style-type: none"> • Influenza Type A • Parainfluenza Type 2 • Parainfluenza Type 3 • Respiratory syncytial virus • Coronavirus • Adenovirus 		(47, 48)
Predominantly lower respiratory tract	5. Acute tracheobronchitis with or without systemic symptoms / signs)		<ul style="list-style-type: none"> • Influenza Type A • Influenza Type B 	<ul style="list-style-type: none"> • Parainfluenza Type 1 • Parainfluenza Type 2 • Parainfluenza Type 3 • Measles virus • Adenovirus • Herpes simplex virus 	(47, 48)
	6. Acute bronchitis / bronchiolitis with or without systemic symptoms / signs)	<ul style="list-style-type: none"> • Respiratory syncytial virus 	<ul style="list-style-type: none"> • Rhinovirus • Adenovirus • Human metapneumovirus • Parainfluenza Type 3 	<ul style="list-style-type: none"> • Influenza Type A • Influenza Type B • Coronavirus • Enterovirus 	(47, 48)

	1. Acute pneumonia	<ul style="list-style-type: none"> • Influenza Type A 	<ul style="list-style-type: none"> • Influenza Type B • Respiratory syncytial virus • Rhinovirus • Adenovirus 	<ul style="list-style-type: none"> • Parainfluenza Type 3 • Human metapneumovirus • Measles virus • Enterovirus • Coronavirus • Varicella virus • Epstein Barr virus • Cytomegalovirus 	(47, 48)
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Alternate “historical” terminology for clinical syndromes:

*: Acute viral rhinosinusitis / rhinopharyngitis (common): Also referred to as “Coryza” / “Common cold” / “Viral upper respiratory tract infection (URTI)”

** : Acute viral rhinosinusitis / rhinopharyngitis with systemic symptoms / signs: also referred to as “flu” or “flu-like” syndrome” / “Influenza-like” syndrome: NB The clinical syndrome can be associated with several pathogens not only influenza viruses. The World Health Organisation (WHO) influenza-like-illness case definition is as follows: “An acute respiratory infection with: measured fever of $\geq 38\text{ C}^\circ$, and cough; with onset within the last 10 days”. [REF: <https://www.who.int/teams/global-influenza-programme/surveillance-and-monitoring/case-definitions-for-ili-and-sari>]

***: Acute viral laryngotracheobronchitis: also referred to “croup”

Supplementary Table S4: Special investigations to diagnose possible complications in other organs / organ systems that are associated with selected pathogens causing acute respiratory infections (ARInf)

Specific organ / organ system	Complications	Special investigations to diagnose complication/s
Respiratory tract (regional complications)	Pneumonia	<ul style="list-style-type: none"> • Chest X-Ray • Lung Computerised Tomogram (CT) scan
Cardiovascular	Myocarditis / pericarditis	<ul style="list-style-type: none"> • Triad of tests (resting electrocardiogram (ECG), Echocardiogram, Serum troponins *) • Additional tests to consider: <ul style="list-style-type: none"> ○ 72hr Holter Electrocardiogram ○ Cardiac Magnetic Resonance (CMR) Imaging ○ Stress electrocardiography (post-acute infection before returning to sport)
	Thrombo-embolic disease	<ul style="list-style-type: none"> • D-dimer • Vascular ultrasound
Nervous system	Meningitis	<ul style="list-style-type: none"> • Lumbar puncture
	Autonomic dysfunction (e.g. POTS, IST)	<ul style="list-style-type: none"> • Heart rate response to active standing or head-up tilt with blood pressure measurement • Heart rate variability (HRV)
	Cognitive dysfunction	<ul style="list-style-type: none"> • Neurocognitive testing (in conjunction with neurologist / neuropsychologist)
Renal / bladder	Nephritis / Acute kidney injury	<ul style="list-style-type: none"> • Serum urea and electrolytes • Glomerular filtration rate (GFR) - estimated and measured
Gastrointestinal	Hepatitis	<ul style="list-style-type: none"> • Liver function tests
Musculoskeletal	Myositis	<ul style="list-style-type: none"> • Resting serum creatine kinase (CK) activity
	Rhabdomyolysis	<ul style="list-style-type: none"> • Positive urine dipstick interpreted with urine microscopy • Resting and 48hr post exercise serum creatine kinase (CK) activity • Serum myoglobin concentration

POTS: Postural orthostatic tachycardia syndrome; IST: Inappropriate Sinus Tachycardia

*: May be raised in athletes post-exercise

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