Junior MARSIPAN guidelines (RCPSYCH 2012)

Risk assessment framework for young people with eating disorders

	Red (High risk)	*Amber (alert to high concern)*	*Green (moderate risk)*	*Blue (low risk)*
BMI and weight	Percentage median BMI<70% (approx. below 0.4th BMI centile)	Percentage median BMI 70–80% (approx. between 2nd and 0.4th BMI centile)	Percentage median BMI 80–85% (approx. 9th–2nd BMI centile)	Percentage median BMI>85% (approx. above 9th BMI centile)
	Recent loss of weight of 1 kg or more/week for 2 consecutive weeks	Recent loss of weight of 500–999 g/week for 2 consecutive weeks	Recent weight loss of up to 500 g/week for 2 consecutive weeks	No weight loss over past 2 weeks
Cardiovascular health	Heart rate (awake)<40 bpm[a]	Heart rate (awake) 40–50 bpm	Heart rate (awake) 50– 60 bpm	Heart rate (awake) >60 bpm
		Sitting blood pressure: systolic <0.4th centile (84–98 mmHg depending on age and gender[b]); diastolic <0.4th centile (35–40 mmHg depending on age and gender[a])	Sitting blood pressure: systolic <2nd centile (98–105 mmHg depending on age and gender); diastolic <2nd centile (40–45 mmHg depending on age and gender[a])	Normal sitting blood pressure for age and gender with reference to centile charts[a]

	Red (High risk)	*Amber (alert to high concern)*	*Green (moderate risk)*	*Blue (low risk)*
	History of recurrent syncope; marked orthostatic changes (fall in systolic blood pressure of 20 mmHg or more, or below 0.4th– 2nd centiles for age, or increase in heart rate of >30 bpm)	Occasional syncope; moderate orthostatic cardiovascular changes (fall in systolic blood pressure of 15 mmHg or more, or diastolic blood pressure fall of 10 mmHg or more within 3 min standing, or increase in heart rate of up to 30 bpm)	Pre-syncopal symptoms but normal orthostatic cardiovascular changes	Normal orthostatic cardiovascular changes
	Irregular heart rhythm (does not include sinus arrhythmia)			Normal heart rhythm
			Cool peripheries; prolonged peripheral capillary refill time (normal central capillary refill time)	
ECG abnormalities	QTc>460 ms (girls) or 400 ms (boys) with evidence of bradyarrhythmia or tachyarrhythmia (excludes sinus bradycardia and sinus arrhythmia); ECG evidence of biochemical abnormality	QTc>460 ms (girls) or 400 ms (boys)	QTc<460 ms (girls) or 400 ms (boys) and taking medication known to prolong QTc interval, family history of prolonged QTc or sensorineural deafness	QTc<460 ms (girls) or 400 ms (boys)

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Hydration status	Fluid refusal Severe dehydration (10%): reduced urine output, dry mouth, decreased skin turgor, sunken eyes, tachypnoea, tachycardia[c]	Severe fluid restriction Moderate dehydration (5–10%): reduced urine output, dry mouth, normal skin turgor, some tachypnoea, some tachycardia,[c] peripheral oedema	Fluid restriction Mild dehydration (<5%): may have dry mouth or not clinically dehydrated but with concerns about risk of dehydration with negative fluid balance	Not clinically dehydrated
Temperature	<35.5°C tympanic or 35.0°C axillary	<36°C		
Biochemical abnormalities	Hypophosphataemia, hypokalaemia, hypoalbuminaemia, hypoglycaemia, hyponatraemia, hypocalcaemia	Hypophosphataemia, hypokalaemia, hyponatraemia, hypocalcaemia		
Disordered eating behaviours	Acute food refusal or estimated calorie intake 400–600 kcal per day	Severe restriction (less than 50% of required intake), vomiting, purging with laxatives	Moderate restriction, bingeing	

	Red (High risk)	*Amber (alert to high concern)*	*Green (moderate risk)*	*Blue (low risk)*
Engagement with management plan	Violent when parents try to limit behaviour or encourage food/fluid intake, parental violence in relation to feeding (hitting, force feeding)	Poor insight into eating problems, lacks motivation to tackle eating problems, resistance to changes required to gain weight, parents unable to implement meal plan advice given by healthcare providers	Some insight into eating problems, some motivation to tackle eating problems, ambivalent towards changes required to gain weight but not actively resisting	Some insight into eating problems, motivated to tackle eating problems, ambivalence towards changes required to gain weight not apparent in behaviour
Activity and exercise	High levels of uncontrolled exercise in the context of malnutrition (>2 h/day)	Moderate levels of uncontrolled exercise in the context of malnutrition (>1 h/day)	Mild levels of uncontrolled exercise in the context of malnutrition (<1 h/day)	No uncontrolled exercise
Self-harm and suicide	Self-poisoning, suicidal ideas with moderate to high risk of completed suicide	Cutting or similar behaviours, suicidal ideas with low risk of completed suicide		
Other mental health diagnoses		Other major psychiatric codiagnosis, e.g. OCD, psychosis, depression		

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Muscular weakness – SUSS Test Sit up from lying flat	Unable to sit up at all from lying flat (score 0)	Unable to sit up without using upper limbs (score 1)	Unable to sit up without noticeable difficulty (score 2)	Sits up from lying flat without any difficulty (score 3)
Stand up from squat	Unable to get up at all from squatting (score 0)	Unable to get up without using upper limbs (score 1)	Unable to get up without noticeable difficulty (score 2)	Stands up from squat without any difficulty (score 3)
Other	Confusion and delirium, acute pancreatitis, gastric or oesophageal rupture	Mallory–Weiss tear, gastrooesophageal reflux or gastritis, pressure sores	Poor attention and concentration	

BMI, body mass index; bpm, beats per minute; ECG, electrocardiogram; OCD, obsessive–compulsive disorder; SUSS, Sit Up, Squat–Stand.
a. Patients with inappropriately high heart rate for degree of underweight are at even higher risk (hypovolaemia). Heart rate may also be increased purposefully through the consumption of excess caffeine in coffee or other drinks.
b. Jackson et al, 2007.
c. Or inappropriate normal heart rate in an underweight young person.