

Presented by

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Integrating cardiovascular medicine and mental health care

There is a strong bidirectional association between brain function and CVRM. Stress is pervasive and is a necessary challenge to life. However, how a person deals with chronic stress can be a determinant of adverse physiological and psychological outcomes.

The brain releases cortisol and adrenaline in response to chronic stress, leading to anxiety/depression, elevated BP, plaque formation and chronic hyperglycaemia. Stress-related substance use, either for pleasure or for relief from psychological or physical pain, can have direct effects on CVRM. Such substances which increase the risk for CVRM include cigarettes/vaping, cannabis, alcohol, painkillers (paracetamol, NSAIDs) and sugar. Furthermore, chronic stress and poor mental health are strongly linked with poor treatment compliance and thereby increase the risks for adverse CVRM outcomes, and potential adverse effects of several mental health medications can impact CVRM:¹

- Antipsychotics are associated with weight gain, metabolic syndrome, QT prolongation; different antipsychotics have differing adverse effects on cardiovascular risk factors (Table 1).
- Antidepressants are associated with weight gain, metabolic syndrome.
- Certain stimulants (dexamphetamine, methylphenidate hydrochloride) are associated with cardiac arrhythmias, weight loss, elevated BP.
- Benzodiazepines/Z-drugs are associated with retrograde amnesia and cognitive deficits that affect compliance; prolonged use increase the risk for dementia and dementia-type symptoms – do not use for longer than two weeks.

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Table 1. Effects of different antipsychotics on cardiovascular risk factors¹

Drug	Weight gain	Hyperglycaemia	LDL cholesterol	HDL cholesterol	Total cholesterol	Triglycerides
Haloperidol	0	++	ND	ND	++	++
Ziprasidone	0	+	0	0	+	+
Aripiprazole	+	++	+	+	++	+
Lurasidone	+	0	+	+	+	+
Cariprazine	+	++	0	+	0	+
Fluphenazine	+	ND	ND	ND	ND	ND
Amisulpride	+	0	ND	+++	++	++
Brexiprazole	+	+	++	0	++	0
Flupentixol	+	ND	ND	ND	ND	ND
Asenapine	++	0	ND	ND	ND	ND
Risperidone	++	+	++	++	++	+
Paliperidone	++	+	++	++	++	+
Quetiapine	++	+	+++	++	+++	++
Iloperidone	++	++	ND	ND	+	++
Sertindole	+++	+	ND	ND	++	+
Zotepine	+++	+++	ND	ND	ND	+++
Clozapine	+++	+++	ND	ND	+++	+++
Olanzapine	+++	++	+++	+++	+++	+++

HDL, high-density lipoprotein; LDL, low-density lipoprotein; +, strength of effect; ND, no data.
Adapted from Bueno H, et al. Eur Heart J 2025; 46(41): 4156-4225.

CVRM effects on mental health

Among the effects of CVRM on mental health are:

- Cardiac disease (plaques, hypertension, arrhythmias) can lead to vascular changes in the brain and the development of vascular dementia.
- Hypo-/hyperglycaemia is associated with brain fog and low mood; acute episodes can have a direct effect on brain function, and chronicity gives rise to vasculopathy that affects brain function and cognition.
- Increased inflammation has been implicated in the onset of psychiatric illnesses.
- Renal dysfunction can give rise to uremic encephalopathy with delirium and psychosis, and CKD has been linked to

neuroinflammation, oxidative stress, and eventual scarring of the brain.

The ESC clinical consensus statement on mental health and CVD¹ includes positive mental health states among predictors of better cardiovascular health. A significant survival impact of subjective well-being has been reported in both men and women with CVD, although found to be more protective in men. Positive affect was associated with a lower risk of coronary heart disease and optimism with a lower incidence of HF, whereas negative affect increased incident CVD events. The impact of mental health conditions in individuals with CVD are summarised in Table 2.

Table 2. The impact of mental health conditions in individuals with CVD¹

Depression	• Post-MI depression independently predicts a 22% higher all-cause mortality and 13% more cardiovascular events per standard deviation score increase. • Depression in people with HF is associated with a two-fold increased risk of death or cardiovascular events. • Depression is associated with lower rates of adherence to treatment.
Anxiety	• Anxiety at 3 months post-MI is associated with a two-fold increased risk of cardiovascular events and all-cause mortality. • Anxiety is a strong predictor of mortality among those with an implantable cardioverter-defibrillator. • Although anxiety may improve treatment adherence, it is also linked to unhealthy lifestyles.
Post-traumatic symptoms	• Studies of cardiac disease-induced post-traumatic symptoms yield mixed results on prognosis and adherence to treatment.

ESC guidelines for the management of mental health and CVD¹

Screen and assess mental health risks together with cardiovascular risk assessment

- Screening for depression, anxiety and PTSD is advised to be integrated into cardiovascular risk assessment.
- Assess depression, anxiety and PTSD in people with established CVD; refer promptly to a professional when needed.
- Caregivers play an essential role in supporting their family members with CVD to incorporate lasting lifestyle changes and to adhere to treatment plans; supporting caregiver well-being benefits both parties.

Non-pharmacological mental health interventions for the patient with CVD

- Communication, education and support – empathy, active listening, communication, patient and caregiver education.
- Psychological interventions – psycho-education, social prescribing, relaxation techniques, cognitive behavioural therapy, emotional support, exposure therapy.
- Lifestyle interventions – physical activity, balanced diet, stress management techniques (mindfulness, yoga), adequate sleep, positive coping strategies.

Pharmacological mental health interventions for the patient with CVD

- Careful selection of indications for anxiolytics, sedatives and hypnotics is advised.
 - Antidepressants can be used for those with moderate to severe anxiety disorders and depression under the guidance of qualified mental health professionals.
 - The use of antidepressants in HF is only advised for severe depression symptoms where the risk of untreated depression outweighs the risk of taking antidepressants.
 - In people with ventricular arrhythmias, switch to newer antidepressants with better safety profiles than antidepressants associated with an increased propensity to prolong QTc.
 - Frequent interactions between antidepressants and cardiovascular drugs affect their efficacy and safety; therapeutic drug monitoring is advisable to optimise pharmacotherapy and minimise potential side effects and clinically relevant drug interactions.
- Behavioural medicine, or the psychology of illnesses, is integral to the prevention and management of CVRM and mental health. An interdisciplinary approach ideally includes physicians, psychologists, psychiatrists, physical therapists and dietitians. Increasing awareness of the relationship between CVRM and mental health will encourage holistic, patient-centred primary care to improve health outcomes.

References

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1. Bueno H, Deaton C, Farrero M, et al. 2025 ESC Clinical Consensus Statement on mental health and cardiovascular disease: developed under the auspices of the ESC Clinical Practice Guidelines Committee. *Eur Heart J* 2025; **46**(41): 4156-4225.

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