# Charlson Comorbidity Index (CCI)

## INPUTS

|  |  |
| --- | --- |
| Age | **Options:**   * <50 years (0) * 50–59 years (1) * 60–69 years (2) * 70–79 years (3) * ≥80 years (4) |
| Myocardial infarction  *History of definite or probable MI (EKG changes and/or enzyme changes)* | **Options:**   * No (0) * Yes (1) |
| CHF  *Exertional or paroxysmal nocturnal dyspnea and has responded to digitalis, diuretics, or afterload reducing agents* | **Options:**   * No (0) * Yes (1) |
| Peripheral vascular disease  *Intermittent claudication or past bypass for chronic arterial insufficiency, history of gangrene or acute arterial insufficiency, or untreated thoracic or abdominal aneurysm (≥6 cm)* | **Options:**   * No (0) * Yes (1) |
| CVA or TIA  *History of a cerebrovascular accident with minor or no residua and transient ischemic attacks* | **Options:**   * No (0) * Yes (1) |
| Dementia  *Chronic cognitive deficit* | **Options:**   * No (0) * Yes (1) |
| COPD | **Options:**   * No (0) * Yes (1) |
| Connective tissue disease | **Options:**   * No (0) * Yes (1) |
| Peptic ulcer disease  *Any history of treatment for ulcer disease or history of ulcer bleeding* | **Options:**   * No (0) * Yes (1) |
| Liver disease  *Severe = cirrhosis and portal hypertension with variceal bleeding history, moderate = cirrhosis and portal hypertension but no variceal bleeding history, mild = chronic hepatitis (or cirrhosis without portal hypertension)* | **Options:**   * None (0) * Mild (1) * Moderate to severe (3) |
| Diabetes mellitus | **Options:**   * None or diet-controlled (0) * Uncomplicated (1) * End-organ damage (2) |
| Hemiplegia | **Options:**   * No (0) * Yes (2) |
| Moderate to severe CKD  *Severe = on dialysis, status post kidney transplant, uremia, moderate = creatinine >3 mg/dL (0.27 mmol/L)* | **Options:**   * No (0) * Yes (2) |
| Solid tumor | **Options:**   * None (0) * Localized (2) * Metastatic (6) |
| Leukemia | **Options:**   * No (0) * Yes (2) |
| Lymphoma | **Options:**   * No (0) * Yes (2) |
| AIDS | **Options:**   * No (0) * Yes (6) |

## FORMULA

Addition of the selected points:

|  |  |  |
| --- | --- | --- |
| **Variable** | **Definition** | **Points** |
| Myocardial infarction | History of definite or probable MI (EKG changes and/or enzyme changes) | 1 |
| Congestive heart failure | Exertional or paroxysmal nocturnal dyspnea and has responded to digitalis, diuretics, or afterload reducing agents | 1 |
| Peripheral vascular disease | Intermittent claudication or past bypass for chronic arterial insufficiency, history of gangrene or acute arterial insufficiency, or untreated thoracic or abdominal aneurysm (≥6 cm) | 1 |
| Cerebrovascular accident or transient ischemic attack | History of a cerebrovascular accident with minor or no residua and transient ischemic attacks | 1 |
| Dementia | Chronic cognitive deficit | 1 |
| Chronic obstructive pulmonary disease | - | 1 |
| Connective tissue disease | - | 1 |
| Peptic ulcer disease | Any history of treatment for ulcer disease or history of ulcer bleeding | 1 |
| Mild liver disease | Mild = chronic hepatitis (or cirrhosis without portal hypertension) | 1 |
| Uncomplicated diabetes | - | 1 |
| Hemiplegia | - | 2 |
| Moderate to severe chronic kidney disease | Severe = on dialysis, status post kidney transplant, uremia, moderate = creatinine >3 mg/dL (0.27 mmol/L) | 2 |
| Diabetes with end-organ damage | - | 2 |
| Localized solid tumor | - | 2 |
| Leukemia | - | 2 |
| Lymphoma | - | 2 |
| Moderate to severe liver disease | Severe = cirrhosis and portal hypertension with variceal bleeding history, moderate = cirrhosis and portal hypertension but no variceal bleeding history | 3 |
| Metastatic solid tumor | - | 6 |
| AIDS\* | - | 6 |

Plus 1 point for every decade age 50 years and over, maximum 4 points.

Note: liver disease and diabetes inputs are mutually exclusive (e.g. do not give points for both "mild liver disease" and "moderate or severe liver disease").

\*This data is from the original Charlson study in 1987, before the widespread availability of effective antiretroviral therapy. We are not aware of any re-evaluations of the CCI using more recent data.

## FACTS & FIGURES

10-year survival = 0.983exp(CCI\*0.9), where CCI = Charlson Comorbidity Index.

## EVIDENCE APPRAISAL