

Optum

A closer look at comorbidities

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Learning objectives

- Define the term comorbidity and discuss its impact upon the injured individual
- Review signs, symptoms, and causes of comorbid conditions such as obesity, diabetes, hypertension, respiratory and mental health disorders
- Review case studies that typify the impact that comorbidities can have on a workers' compensation claim
- Discuss methods to mitigate the effects of comorbidities in a worker population

For additional information on comorbid conditions, read our blog series located on the Clinical Connections section of the Optum website: <https://workcompauto.optum.com/content/owca/owca/en/insights/clinical-connection/comorbidity.html>

Raise your hand if you're seeing these comorbidities in your claims...



Obesity



Diabetes



Respiratory
conditions



Mental health issues



Substance abuse



Tobacco use

What is a Comorbidity?



A comorbidity is defined as the presence of one or more additional conditions co-occurring with a primary condition

Multiple factors contribute to health within populations



Genetic and biologic factors

Linked to chronic conditions such as diabetes and hypertension



Economic conditions

Ability to purchase healthy foods may be impacted

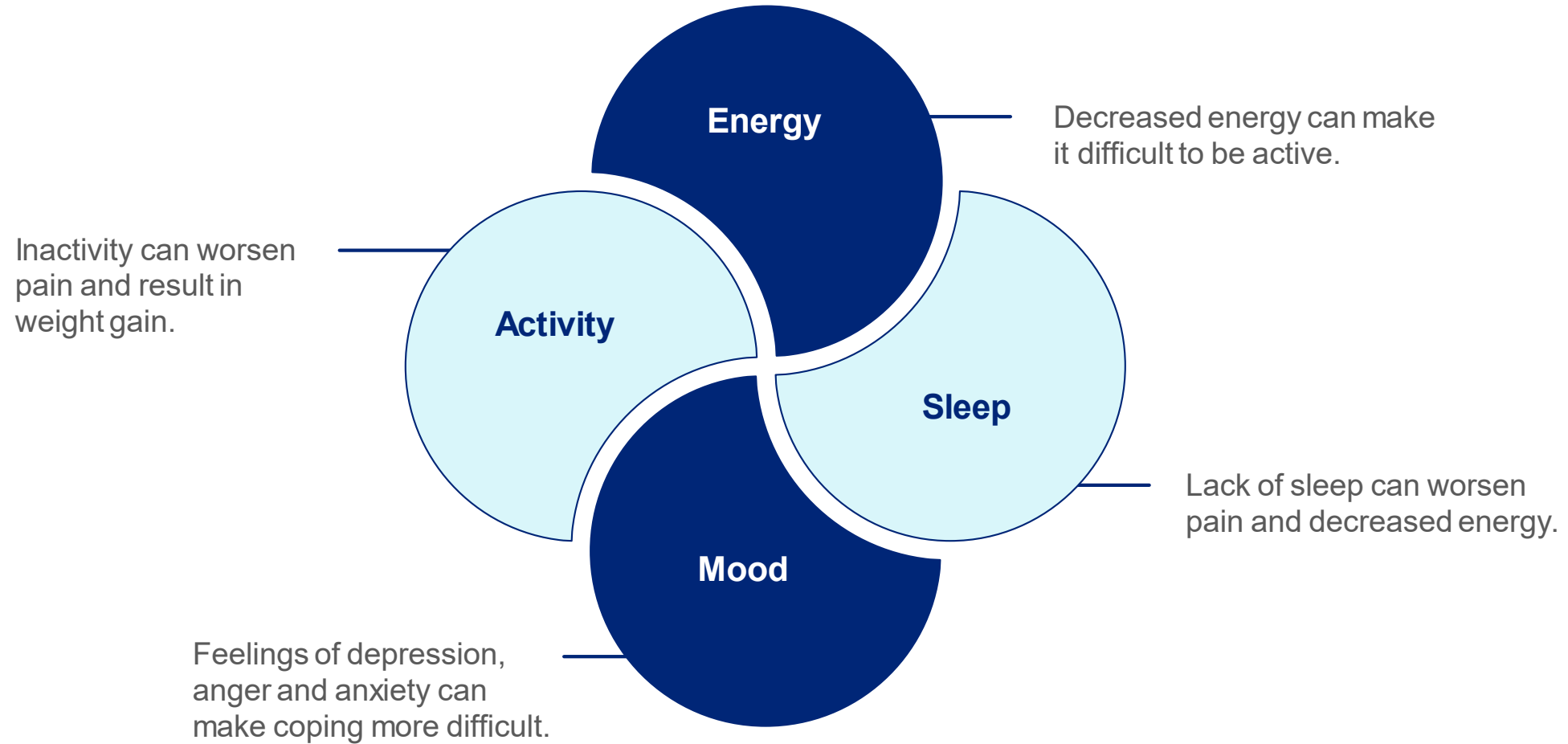


Social influences

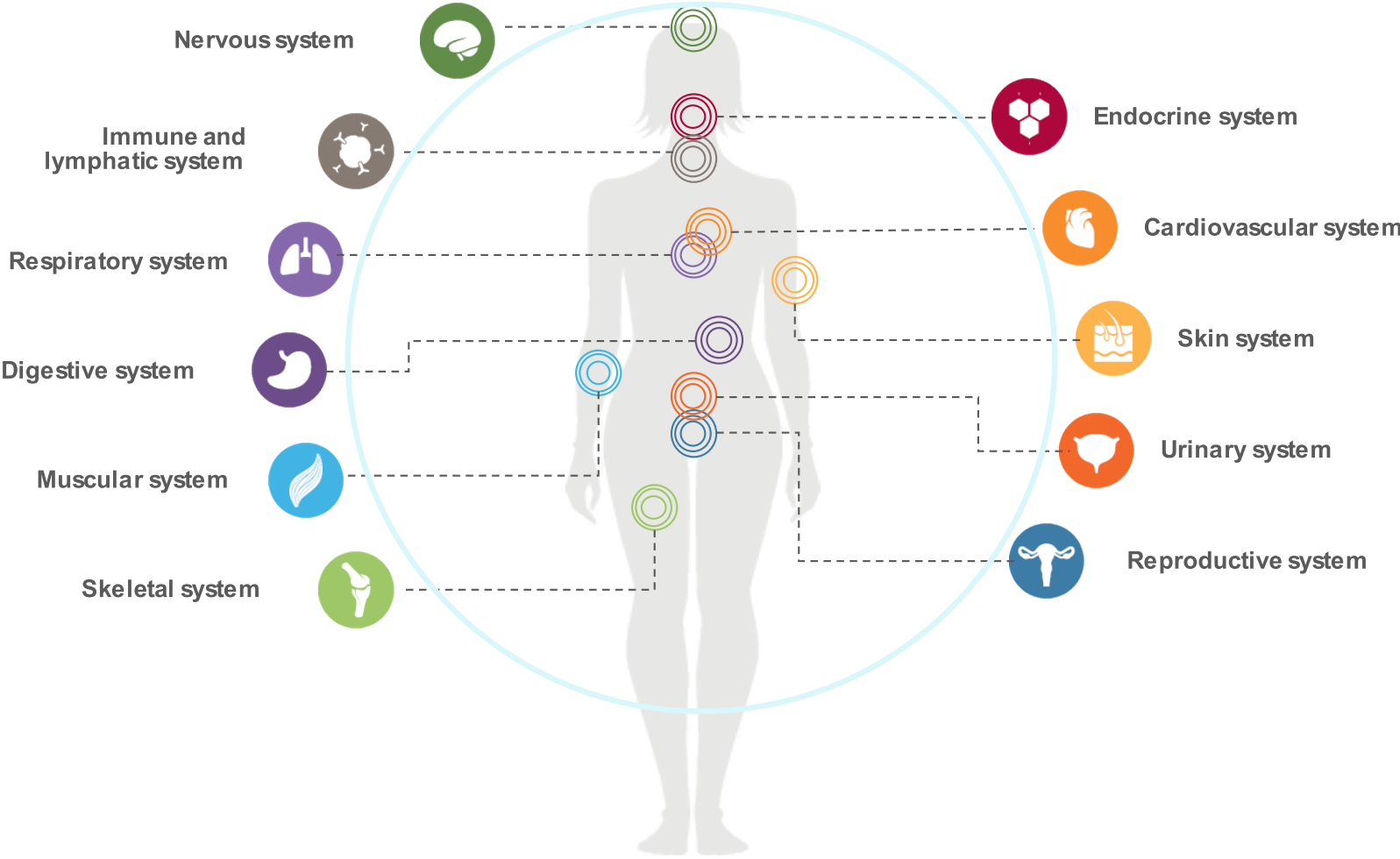
Religious beliefs may influence healthcare decisions

Understanding influencers may help provide a more holistic view of the injured person and assist with recovery and return to work.

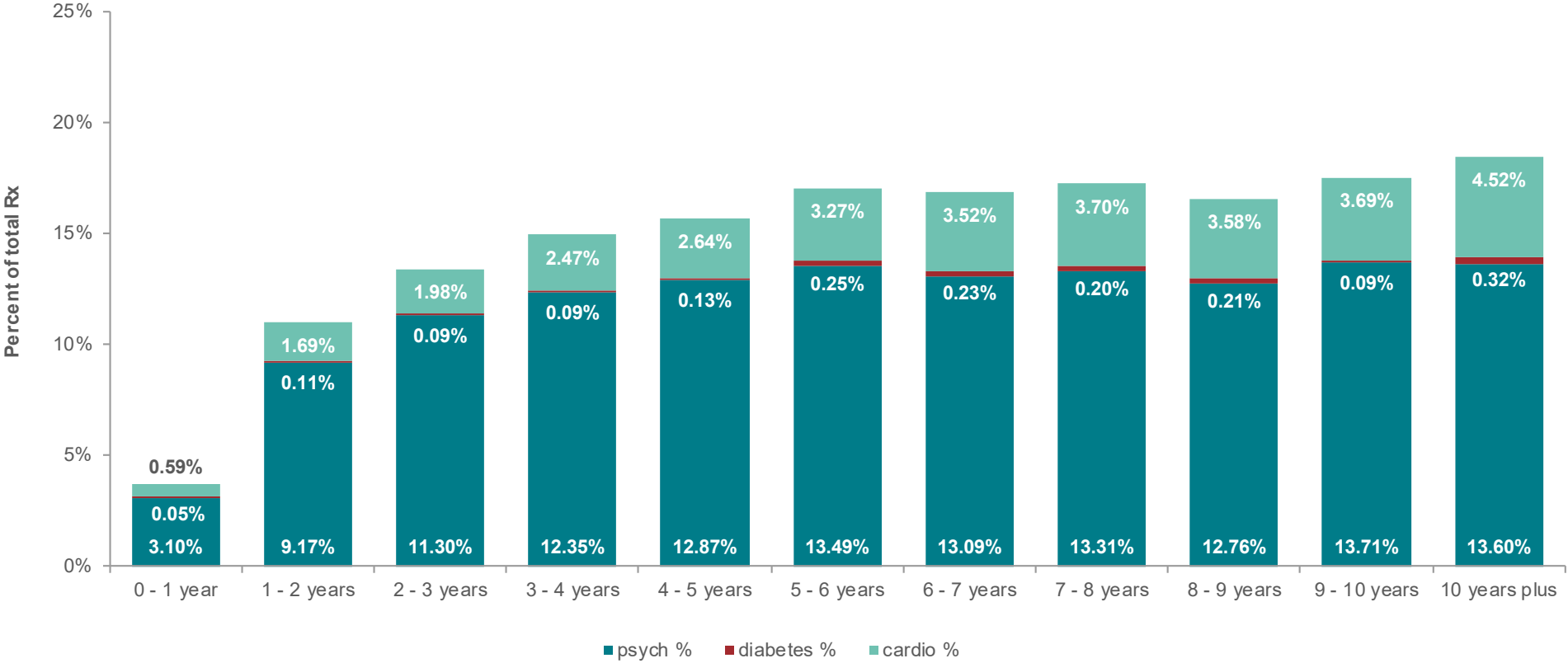
Index Condition (Pain) and Comorbidities



Multiple body systems and comorbidities



Medications used to treat comorbid conditions



Impact on workers' compensation

300% increase
in workers'
comp-related
comorbid diagnoses
in past decade

- Injuries can lead to comorbid conditions
- Higher medical costs
- Increased surgery and litigation rates
- Along with age, comorbid condition is the most predictive of lost time from work
- Leads to longer recovery and disability duration

Forearm fracture	Disability duration
Typical w/o comorbidity	43 days
Diabetes coexistence	62 days
30 days of opioids	119 – 231 days*

*Official Disability Guidelines. Comorbidity Calculator. Available on subscription: <https://www.mcg.com/odg/> Accessed Apr 26, 21.

Why is comorbidity on the rise?

Aging population

Rising average age of U.S. population

30.0 years → **38.6 years**
in 1980 in 2020

Aging workforce

Rising median age of workforce population

34.6 years → **42.2 years**
in 1980 in 2021

Increasing rates of obesity

42% U.S. adults
classified as obese in 2017-18

>90% of Type 2 diabetics
classified as overweight or obese

Sedentary lifestyle

Sitting linked to
increased risk of:

- Type 2 diabetes (2x)
- Depression

80% of Americans
work in jobs
that require
little to no
physical activity

Sources: US Bureau of Labor and Statistics, [Demographic Characteristics \(CPS\) \(bls.gov\)](https://www.bls.gov/data/demographic-characteristics-cps),

A closer look at Comorbidities, <https://www.orkcompauto.optum.com/content/ow-ca/ow-ca/en/insights/clinical-connection/comorbidity.html>

Obesity and Diabetes (aka, “Diabesity”)



Facts about obesity



2/3

of Americans are
overweight or obese



>60

Obesity is linked to over
60 chronic conditions



\$147 B

Annual cost
to Americans

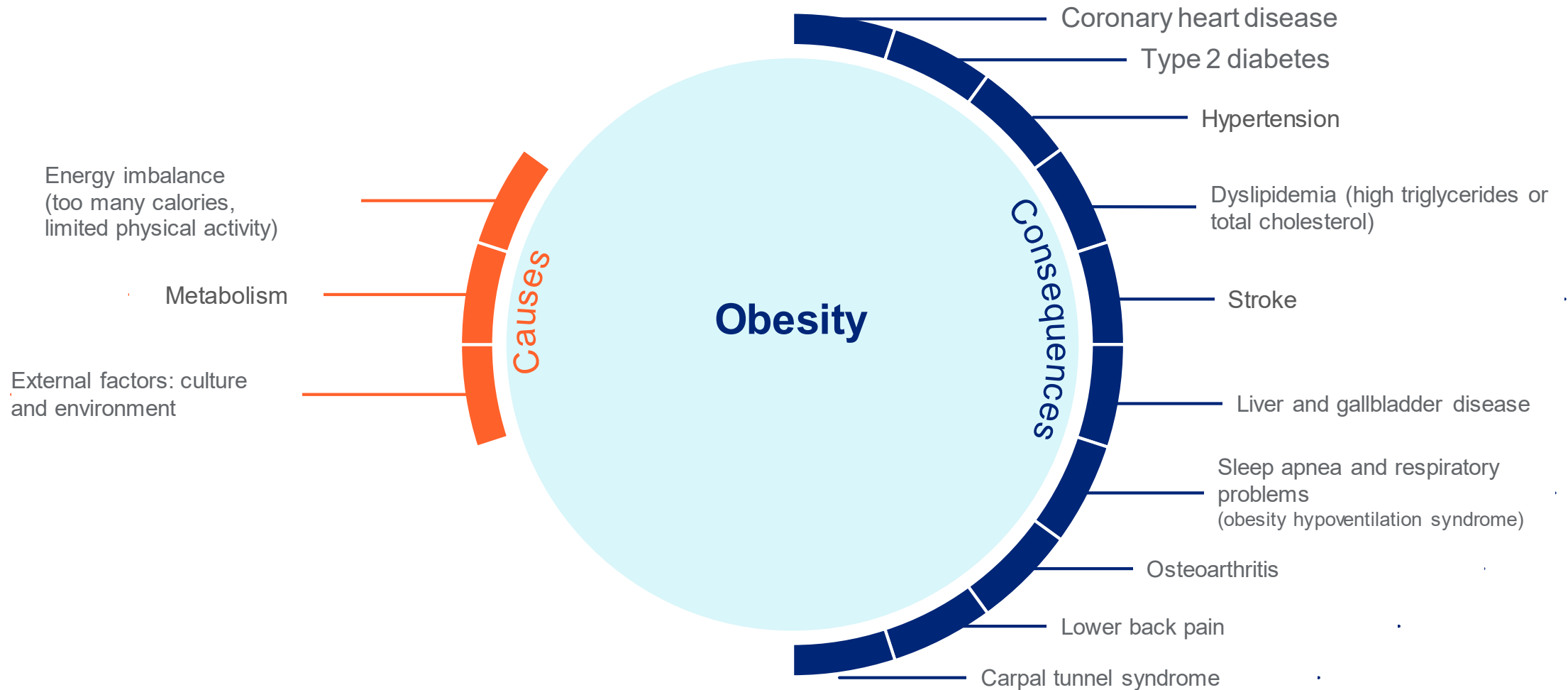


Top 5

Globally, obesity is
1 of the top 5
causes of death*

*Others are hypertension, tobacco use, high blood sugar and physical inactivity

Causes and consequences of obesity



The consequences of obesity on a claim



Medical concerns

- Higher overall medical costs
- Increased time away from work
- Closely associated with musculoskeletal (lower back) and sprain/strain injuries
- Risk for developing other comorbid conditions
- Long-term effect on claim costs and duration (healing time)
- Risks of treatment



Medication concerns

- Selection of medications for the indexed, or underlying condition
- Side effects
- Addition of medications used for treatment of obesity and other comorbid conditions
- Medication concerns for post gastric bypass claimants or weight loss surgery

Managing obesity on a claim



Medical

- Coordination of physicians
- Consider adding case management
- Physical therapy if appropriate for injury



Non-medical

- Encourage ongoing activity if appropriate
- Identify support unit for claimant and encourage regular
- Maintain primary care physician appointments
- Accommodate limitation to allow return to work

The consequences of obesity on a claim

Overweight/obese individuals miss **56% more workdays** annually

- Closely associated with musculoskeletal (lower back) sprain/strain injuries
- Raises the likelihood of injuries – an estimated **38-68% increased incidence**
- Obese workers twice as likely to file work comp claim
- Boosts claim cost

Claims' time frame	Cost
36 months	4 times greater
60 months	5 times greater

Diabetes statistics



34.2 million

Estimated Americans with diabetes



10.5%

U.S. population with diabetes



88M

Estimated U.S. adults with pre-diabetes



\$327 billion

Estimated medial costs in the U.S. in 2017

Medical costs associated with diabetes may be direct or indirect

Direct costs include preventative, diagnostic, and treatment services

Indirect costs: \$90B in reduced productivity due to diabetes-related health reasons

Source: American Diabetes Association. Statistics about diabetes. 2018. <https://www.diabetes.org/resources/statistics/statistics-about-diabetes>

Diabetes related medical conditions

Diabetic retinopathy is the leading cause of blindness

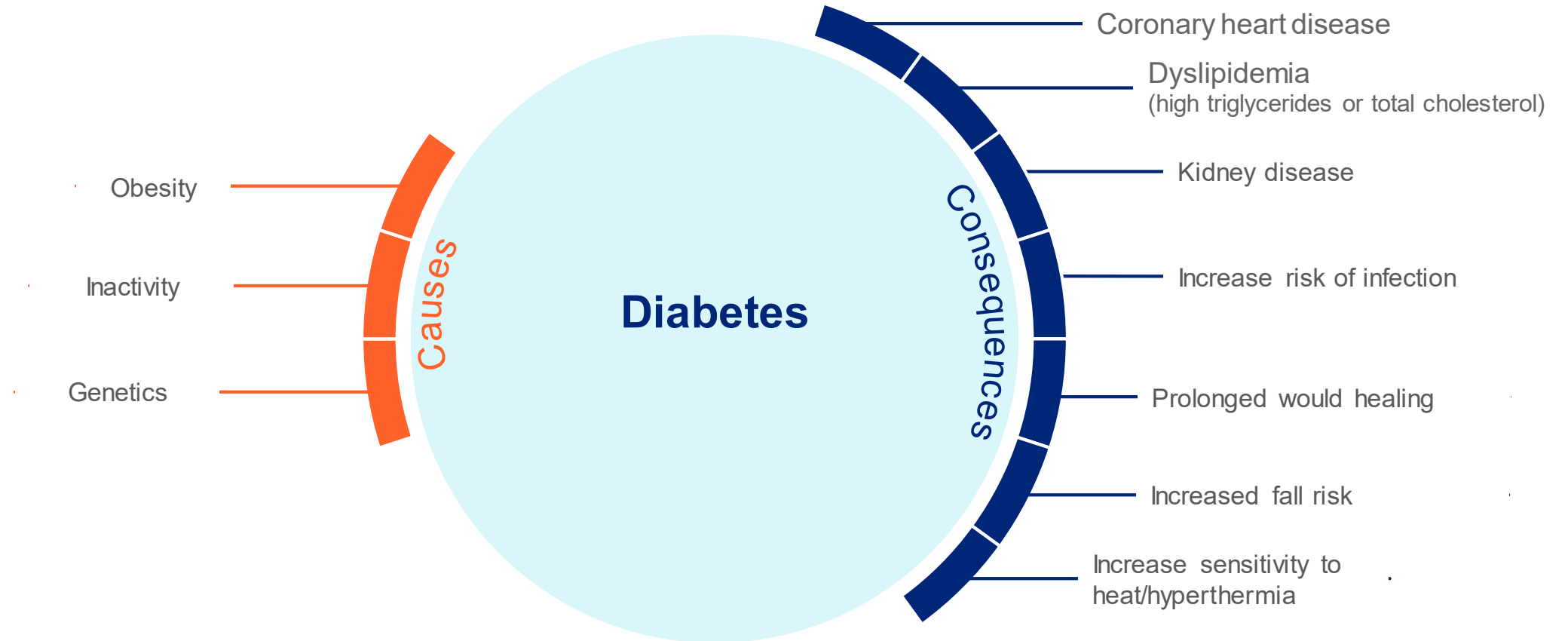
Diabetes is the leading cause of non-traumatic amputation

Diabetes is a leading cause of heart attack and stroke

Diabetes is the 7th leading cause of death in the US



Causes and consequences of diabetes



The consequences of diabetes on a claim



Medical concerns

- Higher overall medical costs
- Increased time away from work
- Risk for developing other comorbid conditions
- Long-term effect on claim costs and duration (healing time)



Medication concerns

- Medications prescribed for injury may worsen diabetes
- Side effects may mimic those of high or low blood sugar
- Addition of medications used for treatment diabetes

Managing diabetes on a claim



Medical

- Coordination of physicians
- Consider adding case management
- Physical therapy if appropriate for injury
- Maintain routine primary care appointments
- Blood glucose monitoring



Non-medical

- Encourage ongoing activity if appropriate
- Identify support unit for claimant and encourage regular activity
- Accommodate limitation to allow return to work

The consequences of diabetes on a claim

- Average medical expense for a diabetic patient is 3 ½ times higher than for a non-diabetic patient
- Diabetics miss an extra week of work
- Average of 5.5 days per year
- 45 million lost workdays, \$4B in lost productivity
- Delayed recovery rates
- Decreased blood flow, increased blood sugar (both promote bacterial growth)
- Increased surgical wound healing, infection (rates increase by 200%)



Combined, obesity and diabetes contribute to a 7X increase in overall mortality

Case study – James



- James is a 59-year-old male that sustained a burn injury to arms and legs
- History of diabetes, obesity, hypertension and sleep apnea
- He was prescribed several doses of a steroid dose pack and silver sulfadiazine cream

Comorbidity can make a bad situation worse

Impact disability duration

- Underlying diabetes may slow or hinder wound healing
- Hypertension may impede wound healing

Medications can worsen comorbidity

- Prescribed medications worsen blood glucose control
- Steroids can worsen hypertension

Injuries can lead to comorbidity

- Severity of injury and pain limit ability to exercise further hindering diabetes and hypertension management
- Lack of exercise can reduce ability to manage obesity

Mental Health and Substance Use (MH/SU) Disorder



Defining common mental health conditions



Mood disorders

Severely impacts one's mood and related functions
Includes different types of depression and bipolar disorder



Trauma and stressor disorders

Direct or indirect exposure to traumatic event with effects on cognition and mood, and including symptoms of intrusion, avoidance, arousal and reactivity
Historically grouped with anxiety disorders



Substance use disorders

Occur when the recurrent use of alcohol and/or drugs causes clinically significant impairment, including health problems, disability, and failure to meet major responsibilities at work or home



Psychological issues are the #1 barrier to successful return to function and work outcomes

The impact of mental illness on injured persons



One in five American adults experiences mental illness each year



Mental health results in **lost earnings of \$193 billion dollars** annually

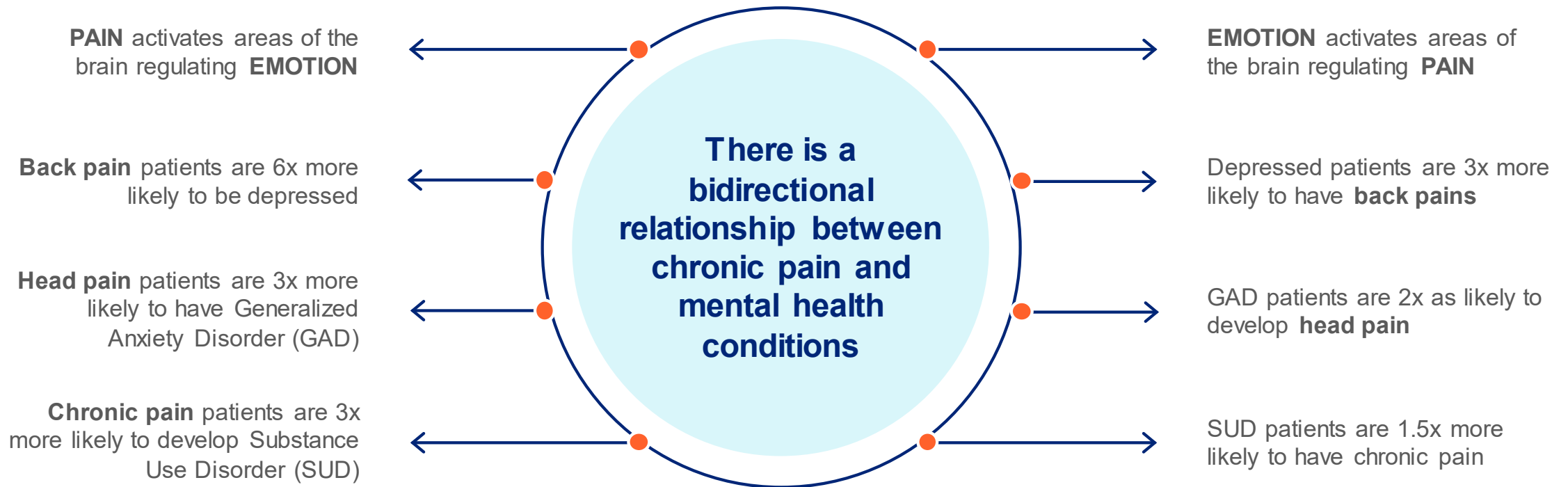


For workers' comp and auto no-fault, **up to 60% of claimants suffering from pain have mental health challenges**, such as substance use disorder, anxiety and depression



A high percentage of claimants develop comorbid mental health conditions and are more likely to experience **delayed recovery**

The relationship between chronic pain and mental health conditions



Substance misuse and abuse



Substance abuse

30.5 million

people used an illicit drug in the past 30 days
(1 in 9 Americans)

26 million

people are current marijuana users

~19.7 million

people had substance use disorder related to their alcohol or illicit drug use

3.2 million

people currently misuse prescription pain relievers



Alcohol use

140.6 million

Americans currently use alcohol

66.6 million

people engaged in binge drinking in the past month



Tobacco use

34.1 million

people are current smokers

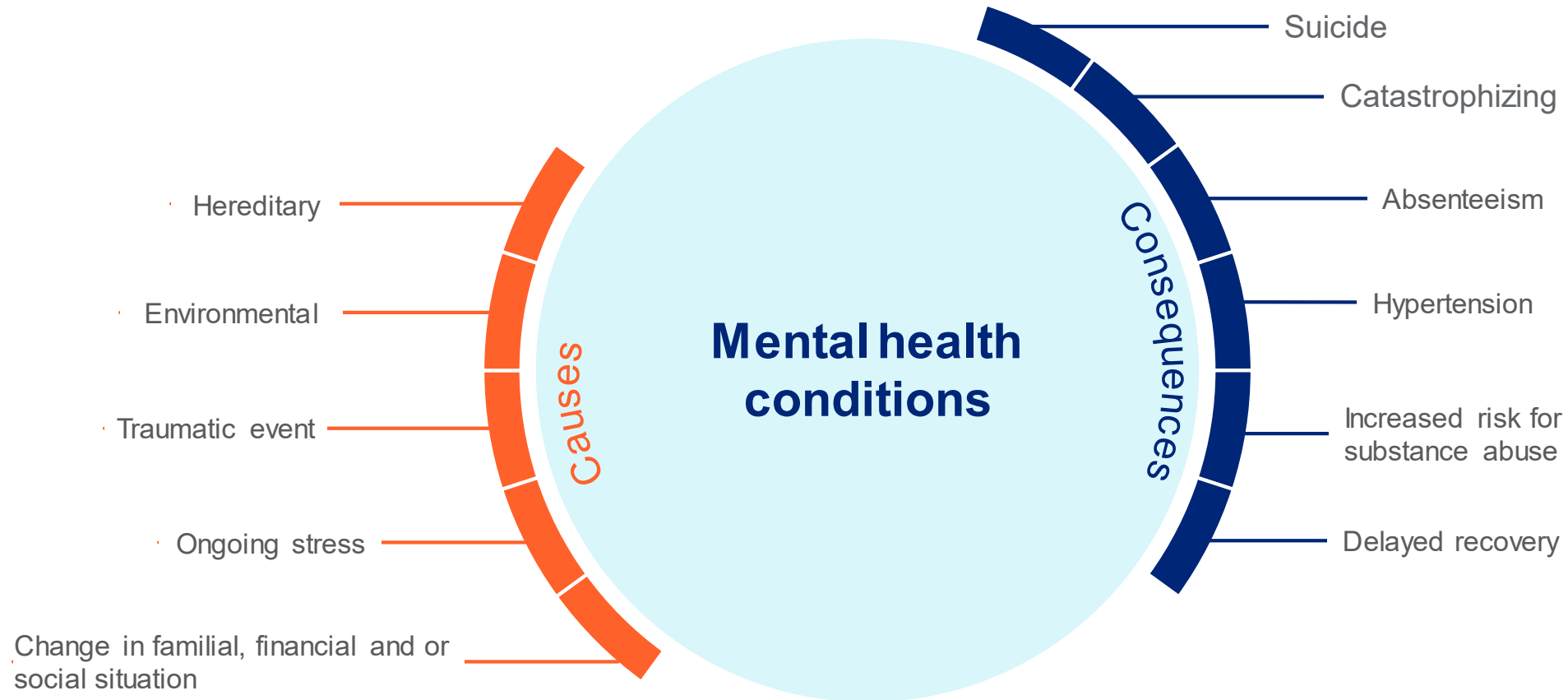
27.8 million

people are daily smokers

11.4 million

people (40% of all) smoke a pack a day

Causes and consequences of mental health conditions



The impact of mental health conditions



Condition

- Anxiety disorder
- Insomnia
- Post-traumatic stress
- Substance abuse disorder



Potential impact

- Difficulty concentrating, difficulty sleeping, social avoidance
- Increased irritability, decreased focus, weight gain, daytime sedation, decreased function
- Difficulty sleeping, poor concentration, social withdrawal
- Decreased functionality, difficulty sleeping, financial and relationship stress, poor concentration

Sources

1. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4570484/> - Incidence & Cost of Depression after Occupational injury
2. <https://pdfs.semanticscholar.org/4841/5b85657440be8695c39c088a493441afc8c8.pdf>

Managing mental health conditions on a claim



Medical

- Case management
- Counseling
- Review of medical records and claimant history for other comorbidities
- Cognitive behavior and/or biofeedback
- Consider using medications that can manage both the injury and the comorbid depression or anxiety for improved return to work
- Physical therapy if appropriate for injury as physical activity improves mood



Non-medical

- Encourage ongoing physical activity as appropriate
- Identify support unit for claimant
- Group support
- Accommodate limitation to allow return to work

Case study – Mary



- Mary is a 35-year-old female that sustained a severe back injury in 2017
- History of insomnia and depression, with worsening of symptoms since injury, currently a smoker
- Has existing antidepressant prescription (Prozac); back pain continues despite use of ibuprofen and skeletal muscle relaxants

Comorbidity can make a bad situation worse

Impact disability duration

- Underlying depression make Mary higher risk for prolonged recovery
- Back pain exacerbates depression; depression exacerbates back pain (vicious cycle)

Medications and comorbidity

- Options for treatment of both back pain and depression may provide improvement (e.g., duloxetine, amitriptyline)
- Skeletal muscle relaxants can act as CNS depressants; only short-term use is recommended

Injuries can lead to comorbidity

- Working provides social interaction and feeling of value and worth
- Severity of injury and pain limit ability to exercise or work, further worsening depression

Smoking and Respiratory Conditions



Chronic respiratory conditions

22.5 million U.S adults have asthma

16.3 million U.S. adults have COPD

An additional **33.2 million adults** have
other chronic lung disease



Chronic respiratory conditions

While smoking is most recognized cause of respiratory diseases and lung cancer, **it is not the only cause**

- **Occupational respiratory hazards linked to disease in 1 of 10 people worldwide**
- Working in the presence of respiratory irritants can cause reactive airway disease and worsen pre-existing respiratory conditions
- Comorbid respiratory disorders increase the risk of developing an exposure-related condition and can result in long-term disability and increased costs

Smoking and tobacco use

34.1 million (14%) of adults are current smokers

16 million people live with a smoking related disease

480,000 deaths attributed to smoking each year

Source: <https://www.samhsa.gov/data/report/2019-nsduh-annual-national-report>



Vaping and the younger workforce

- Vaping involves heating a liquid and reducing the liquid particles into small particles for ease of inhalation (aerosolizing)
- Common names: e-cigarettes, vapes, e-cigs, hookahs, pens, Juuls® mods
- E-cigarettes highest used tobacco product by teenagers

More than 1.3M
teenagers use
e-cigarettes as of 2018

78% increased use
from 2016 to 2017 in
high-school students

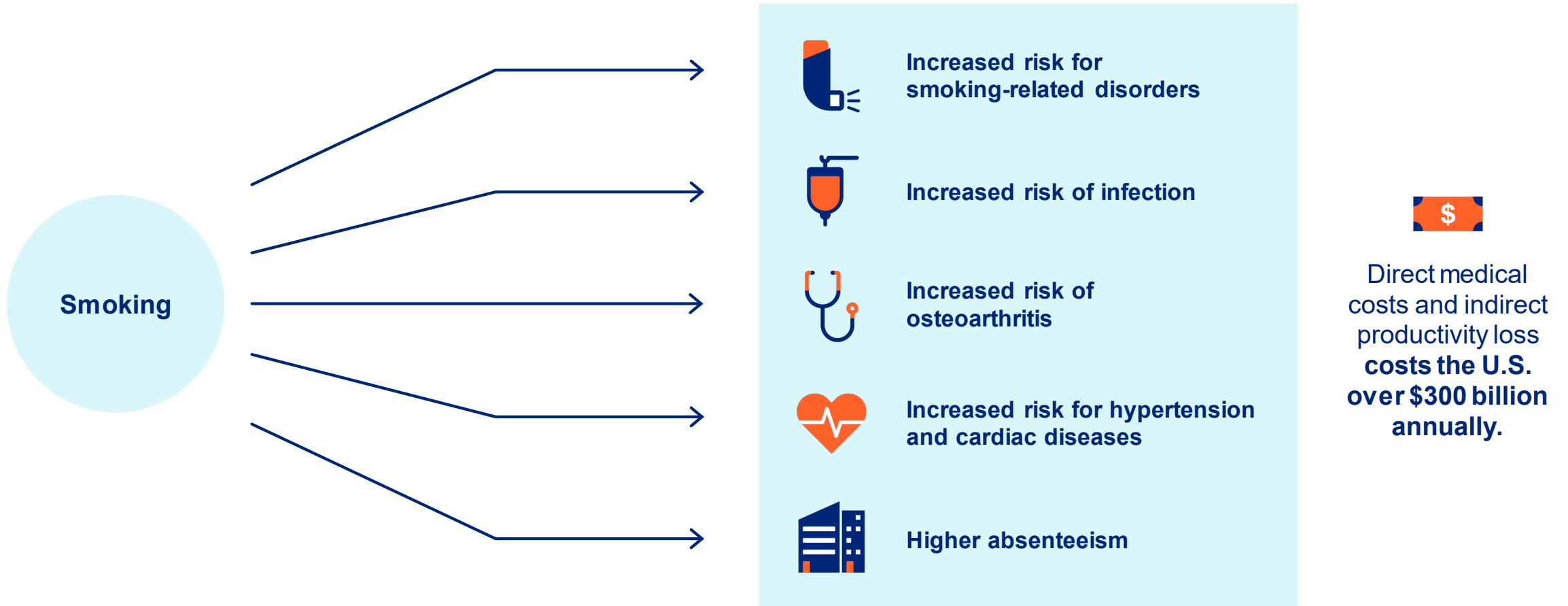
As of 2018:

3.6 million middle school and high school students used e-cigarettes within the previous 30 days

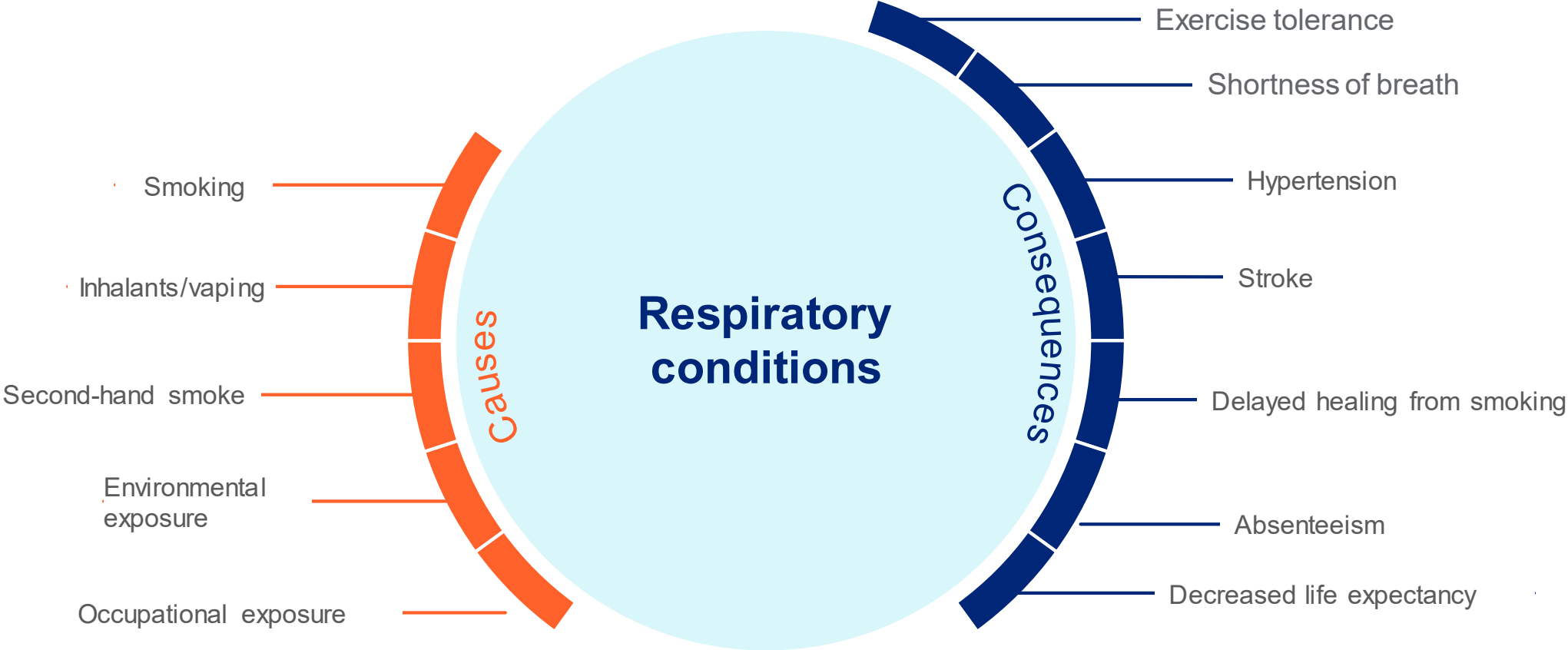
30.7% of e-cigarette users start smoking

[Source: https://www.collinsdictionary.com/us/dictionary/english/aerosolization](https://www.collinsdictionary.com/us/dictionary/english/aerosolization)

Tobacco products and the injured person



Causes and consequences of respiratory conditions



The consequences of respiratory conditions on a claim



Medical concerns

- Risk for injury
- Time away from work
- Higher overall treatment costs
- Risk for developing other comorbid conditions



Medication concerns

- Selection of medications for pain control and/or inflammation
- Drug-drug interactions
- Side effects
- Contraindications
- Addition of medications used for treatment of comorbidity

Managing respiratory conditions on a claim



Medical

- Case management
- Coordination of care with all prescribers
- Medication management and education
- Physical therapy if appropriate for injury as physical activity maintain respiratory health



Non-medical

- Encourage ongoing exercise as appropriate
- Smoking free environment
- Employer sponsored smoking cessation opportunities
- Accommodate limitation to allow return to work

Mitigating the Impact of Comorbidities

What to consider to improve outcomes for injured persons



Look at injured persons holistically



Employer sponsored wellness programs

Ex: nutritional counseling, weight management, gym membership reimbursement

More than 80% of employers offer programs

Engagement can result in significant decrease in healthcare and compensation costs



Early screening

Identify comorbidities early



Utilize case managers

To help identify comorbidities (7.2M have undiagnosed diabetes)



Coordination of care

Start the conversation with prescribers but also include, employers, injured person and healthcare team

Summary

Putting it all together

- Today we talked about what a comorbidity is and the impact they can have on workers' compensation claims
- We discussed potential causes of comorbidities and potential treatments for obesity, diabetes, and mental health disorders such as depression and substance use, smoking, respiratory and cardiac conditions
- We discussed solutions or interventions that may improve outcomes for a workers' compensation claim with comorbidities
- Effective management of all comorbidities must be based on a partnership between a highly motivated patient and a committed team of health professionals
- For additional information on comorbid conditions, read our blog series located on the Clinical Connections section of our website.
<https://workcompauto.optum.com/comorbidity>

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