



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Trawsnewid Addysg; Trawsnewid Bywydau
Transforming Education; Transforming Lives

Introduction to Fitness and It's importance in Dance

Dr Anna Stevenson

Lecture 2



RECAP LAST WEEK



CARDIO VASCULAR
FITNESS



FLEXIBILITY

Recap Components of Fitness



Health related Components

Cardiovascular endurance

Muscular Strength

Muscular Endurance

Body Composition

Flexibility

Skill related Physical Fitness Components

Agility

Coordination

Balance

Power

Reaction Time

Speed



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Trawsnewid Addysg; Trawsnewid Bywydau
Transforming Education; Transforming Lives

Cardiovascular (CV) Fitness



What is it?



Why is it importance for dance?



How do we improve it?

What is CV Fitness?



Refers to the efficiency of the heart, lungs, and blood vessels in delivering oxygen during physical activity.



Involves activities that increase heart rate, like...



Relies on aerobic capacity, meaning your body's ability to perform sustained work.

Why is CV Fitness important for Dance?



Cardiovascular fitness impacts endurance, performance, and recovery.



Helps dancers maintain energy during long rehearsals and performances.

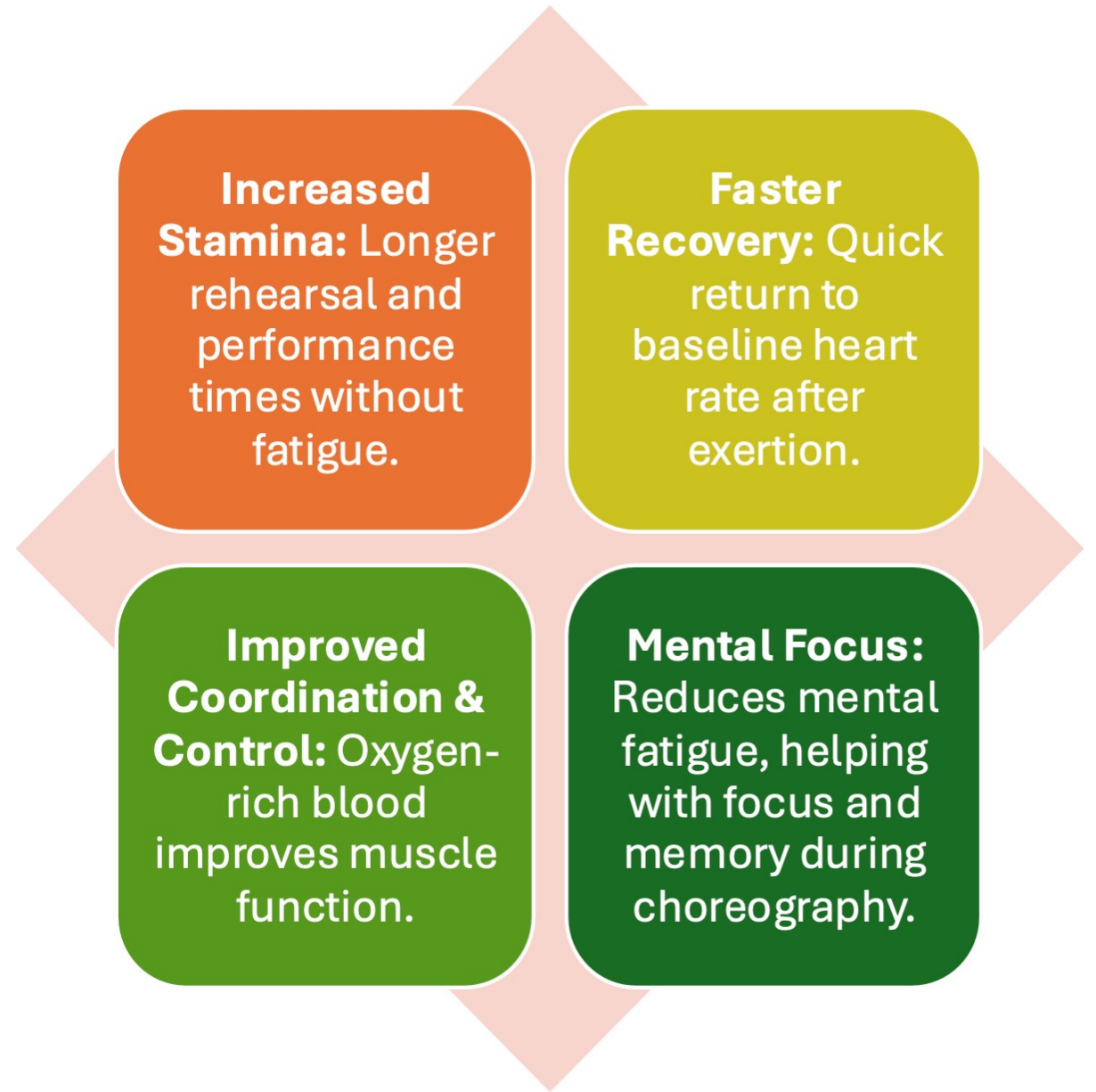


Prevents fatigue and reduces the risk of injury.



Enhances oxygen delivery to muscles for better efficiency

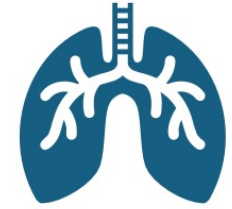
What are the benefits of higher levels of CV fitness for Dance?



A Brief look at the Physiology



Heart: Pumps oxygenated blood throughout the body.



Lungs: Oxygenate the blood and expel carbon dioxide.



Blood Vessels: Carry oxygen and nutrients to muscles and remove waste.

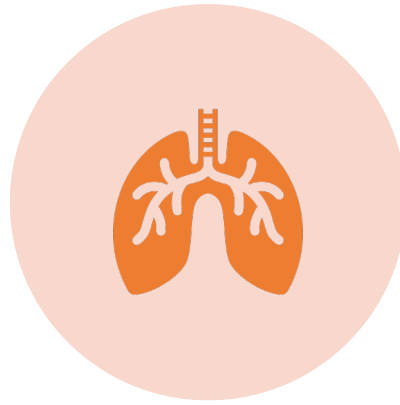


Capillaries: Facilitate gas exchange at muscle level.

Aerobic Capacity



AEROBIC CAPACITY IS THE MAXIMUM AMOUNT OF ENERGY THE BODY CAN MAKE USING **OXYGEN** DURING EXERCISE.



IT SHOWS HOW WELL THE HEART AND LUNGS SUPPLY OXYGEN TO THE MUSCLES.



USUALLY MEASURED BY HOW MUCH OXYGEN A PERSON CAN USE PER MINUTE, BASED ON THEIR BODY WEIGHT (**CALLED VO₂ MAX**).

How do we improve CV Fitness



TRAINING MODE –
RUNNING, CYCLING,
SWIMMING ETC.



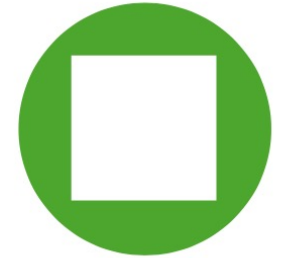
TRAINING
FREQUENCY



TRAINING INTENSITY



DURATION



TYPES OF TRAINING –
CONTINUOUS,
INTERVAL, FARTLEK

Designing an Aerobic Endurance Program

Step 1: Exercise MODE

Exercise mode is the specific activity performed by the athlete: cycling, running, swimming, and so on.

The more specific the training mode is to the sport, the greater the improvement in performance.

Designing an Aerobic Endurance Program

Step 2: Training FREQUENCY

Training frequency is the number of training sessions conducted per day or per week.

The frequency of training sessions will depend on the interaction of exercise intensity and duration, the training status of the athlete, and the specific sport season.

Designing an Aerobic Endurance Program

Step 3: Training INTENSITY

Adaptations in the body are specific to the intensity of the training session.

High-intensity aerobic exercise increases cardiovascular and respiratory function and allows for improved oxygen delivery to the working muscles.

Increasing exercise intensity may also benefit skeletal muscle adaptations by affecting muscle fiber recruitment.

Designing an Aerobic Endurance Program

Step 3: Training INTENSITY

Heart rate = The most frequently used method for prescribing aerobic exercise intensity

Ratings of perceived exertion scales

TABLE 20.2 Rating of Perceived Exertion (RPE) Scale

Rating	Description
1	Nothing at all (lying down)
2	Extremely little
3	Very easy
4	Easy (could do this all day)
5	Moderate
6	Somewhat hard (starting to feel it)
7	Hard
8	Very hard (making an effort to keep up)
9	Very very hard
10	Maximum effort (can't go any further)

Reprinted, by permission, from NSCA, 2012, Aerobic endurance training program design, by P. Hagerman. In *NSCA's essentials of personal training*, 2nd ed., edited by J.W. Coburn and M.H. Malek (Champaign, IL: Human Kinetics), figure 16.1, 395.

Designing an Aerobic Endurance Program

Step 4: Exercise DURATION

Exercise duration is the length of time of the training session.

The duration of a training session is often influenced by the exercise intensity; the longer the exercise duration, the lower the exercise intensity.

Types of CV Training/ Exercise

Continuous / Steady State Training

Interval

Faartlek

Continuous/Steady State Training

Steady-state cardio involves performing a continuous, moderate-intensity exercise for an extended period of time (typically 20-60 minutes). This helps build aerobic endurance, which is crucial for maintaining energy throughout rehearsals and performances.



Examples for Dancers:

Running at a moderate pace.

Cycling on a stationary bike or outdoors.

Swimming at a consistent speed.

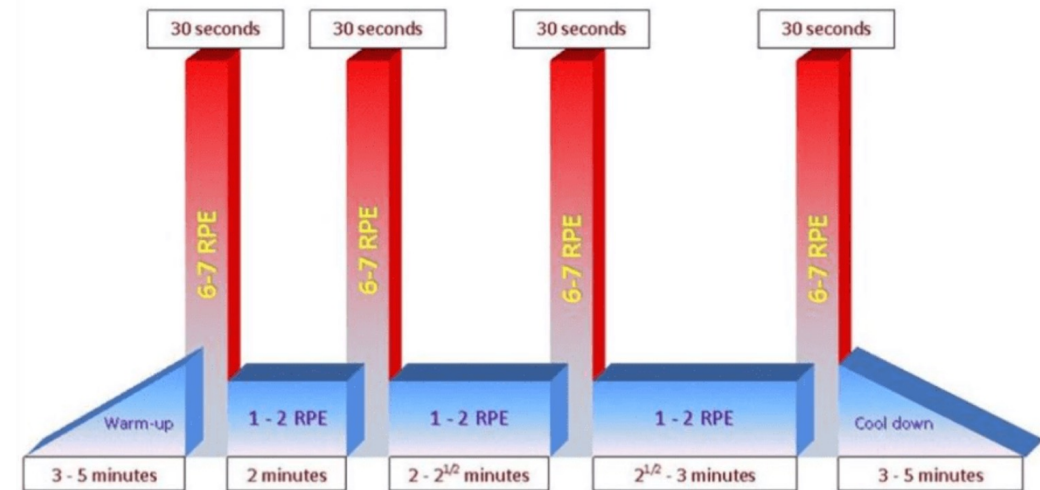
Brisk Walking or hiking.

Interval Training

Interval training involves alternating periods of high-intensity exercise with low-intensity recovery or rest periods.

This approach can be tailored to the dancer's fitness level and dance style, and it's an effective method for improving both aerobic and anaerobic fitness.

Interval training closely mirrors the demands of dance, where high-energy bursts are often followed by moments of recovery or lower-intensity movement.



Fartlek Training

What it is:

Fartlek is a Swedish term that translates to "speed play," and it combines continuous running with random, unstructured bursts of speed. Unlike traditional interval training, the high-intensity bursts are varied in both intensity and duration, making it a less predictable and more dynamic workout.



Examples for Dancers:

Fartlek Runs: During a 30-minute run, alternate between moderate jogging and spontaneous sprints, running at faster speeds whenever you feel energetic, then slowing down when needed.

Dance-Specific Fartlek: During a dance class, pick a section of choreography where you alternate between faster and slower movements, challenging both your stamina and ability to control tempo.

KEY POINT

The various types of training induce different physiological responses. A sound program should incorporate all types of training into the athlete's weekly, monthly, and yearly training schedule.



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Trawsnewid Addysg; Trawsnewid Bywydau
Transforming Education; Transforming Lives

Flexibility



What is it?

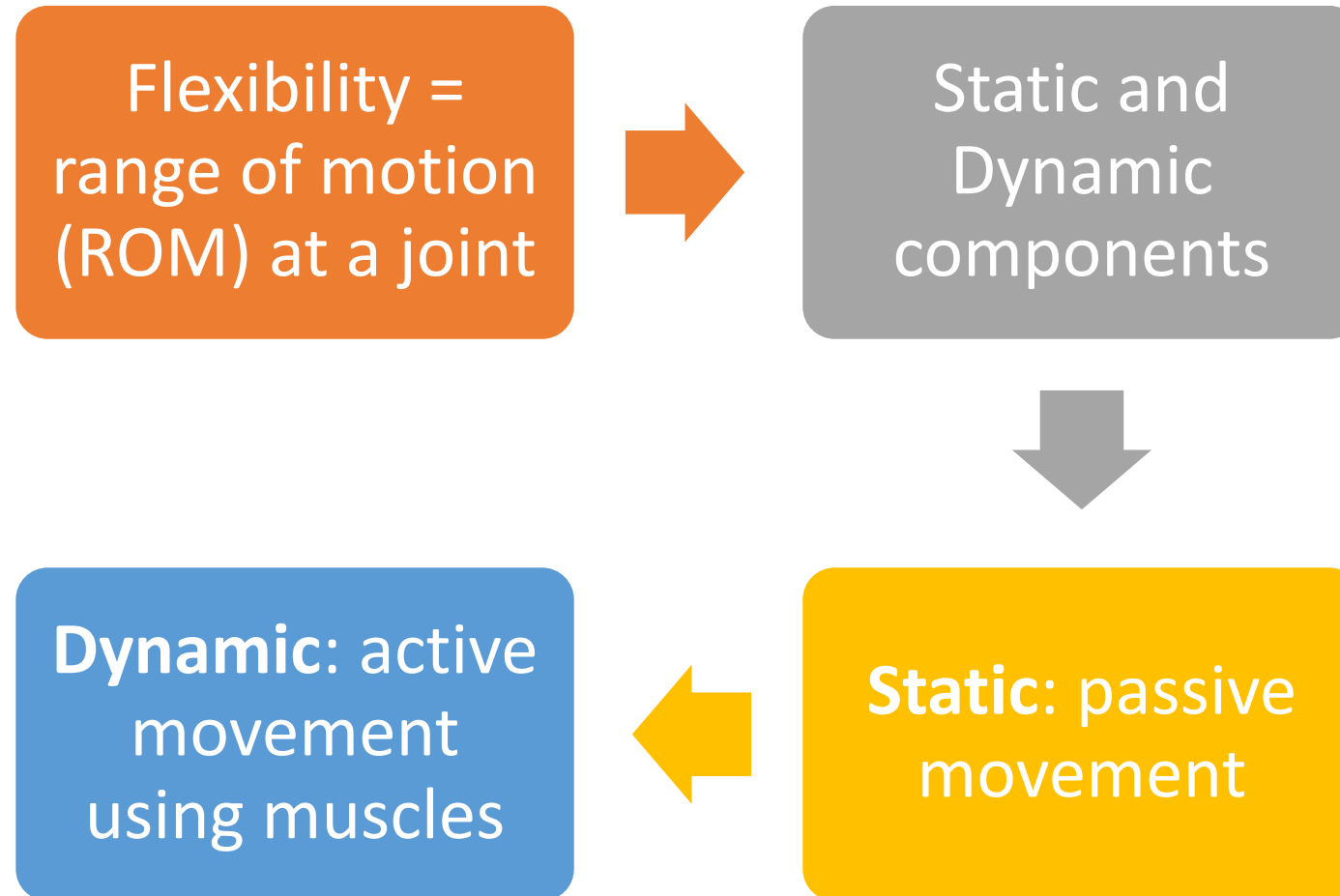


Why is it importance for dance?



How do we improve it?

What is Flexibility?



Factors Affecting Flexibility (1)

Joint structure

Age (Older people tend to be less flexible than younger people)

Sex - females tend to be more flexible than males.

Muscle and connective tissue (Elasticity and plasticity of connective tissues affect ROM)

Factors Affecting Flexibility (2)

Stretch tolerance

Neural control

Resistance training

Muscle bulk

Activity level – active tends to be more flexible than inactive

Task: Why is Flexibility Important for Dance?

- **Discuss in pairs:**
- Technique
- Aesthetics
- Injury prevention
- Performance quality

Stretching Guidelines - Frequency, duration & intensity of stretching



When Should Dancers Stretch?



BEFORE CLASS/WARM UP:
DYNAMIC STRETCHING



AFTER CLASS: STATIC &
PNF



SEPARATE FLEXIBILITY
SESSIONS

Types of Stretching

Static

Dynamic

Ballistic

PNF

STATIC

- Position that facilitates **relaxation**.
- Move to the point in the ROM where you experience mild discomfort.
- Hold stretches for 15 to 30 seconds.
- Repeat unilateral stretches on both sides.

Dynamic Stretching

- 5–10 reps
- Gradually increase ROM on each repetition
- Increase the speed of motion on subsequent sets where appropriate.
- Actively control muscular actions as you move through the ROM.
- Dance-specific

PNF Stretching

- **Proprioceptive neuromuscular facilitation**
- (PNF) stretch
- Hold-relax
- Passive prestretch (10 seconds)
- Isometric hold (6 seconds)
- Passive stretch (30 seconds)

PNF Hamstring Example

- Partner stretch
- Communication and safety



Assessment Groups

Presentation Groups:

Group 1

Carys
Kiana
Martha
Ethan

Group 2

David
Matthew
Eva
Sienna

Group 3

Erin
Lillie M
Harrison
Sandy-Sophie

Group 4

Evieanna
Ryan
Lilly S
Mia

Group 5

Isabelle
Jess
Lili W
Rebecca

Assessment

- Group Presentation (8 minutes)
- Outline the importance of fitness and training for dancers.
- Provide an overview of key components of fitness associated with dance and include examples of how dancers could train and develop these. In doing so, show how the principles of training have been considered.
- You can use Power Point (or equivalent) and include referencing and a bibliography.
- Research, evaluation and interpretation should be used. The correct referencing standard should be used throughout.

Reference List

- American College of Sports Medicine (ACSM). (2018). ACSM's Guidelines for Exercise Testing and Prescription (10th ed.). Wolters Kluwer.
- Haff, G. G., & Triplett, N. T. (2015). Essentials of Strength Training and Conditioning (4th ed.). Human Kinetics.
- Wilmore, J. H., & Costill, D. L. (2018). Physiology of Sport and Exercise (7th ed.). Human Kinetics.