

Suggested instructions for study participants

" As a participant of this study, You will be asked to perform a standard skydive from 4 000 m above mean sea level (AMSL) and maintain a stable belly-to-earth (i.e. belly-to-relative-wind) body position in free fall terminal velocity.

1. Free fall terminal velocity reduction:

1.1 At approximately 1 500 m AMSL, increase Your body surface area to the relative wind.

Present as much body surface area to the relative wind as comfortable and as judged to be safe, to slow down as much as safely possible.

1.2 At approximately 1 200 m AMSL, deploy Your main parachute pilot chute.

1.3 In case of a main parachute system malfunction, follow standard reserve parachute activation procedures and *do not follow any further instructions for this intervention study!*

2. Head high pitched up overall body attitude:

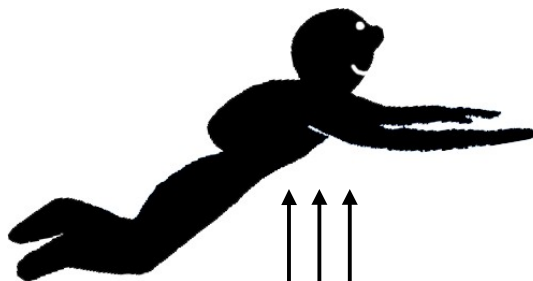
2.1 Throughout the pitch angle intervention component, maintain a stable body position in roll and yaw axes, i.e. shoulders level to horizon and unaltered heading.

2.2 While the main parachute pilot chute inflates and extracts the main parachute, extend Your arms forward and bend Your knees, "dipping" them into the relative wind. (This manoeuvre is expected to increase the pitch angle of Your long body axis attitude, raising Your head and shoulders up from the flat belly-to-relative-wind plane.)

2.3 Throughout the pitch angle intervention component, maintain a "nose high" position of Your head relative to Your long body axis - *unless You need to bend Your head forward towards the chest or look down for safety reasons!*

2.4 The sought pitch angle is circa 135 degrees from the relative wind direction, i.e. circa 45 degrees pitched up from the flat belly-to-relative-wind plane.

2.5 Pitch angle illustration:



2.6 While under open canopy, recite 'Daffodils' by William Wordsworth. "

Revised suggested instructions for study participants

"This study aims to evaluate an intervention of aerial manoeuvres to reduce the biomechanical load on the neck of a parachutist during the parachute opening. If found to be of reasonable benefit, the aerial manoeuvres are intended to be suggested among experienced skydivers who are exposed to repetitive parachute openings, and who have the necessary skills.

As a participant of the study, You will be asked to perform a standard skydive from 4 000 m above mean sea level (AMSL) and maintain a stable belly-to-earth (i.e. belly-to-relative-wind) body position in free fall terminal velocity.

Throughout the skydive, maintain a stable body position and follow standard safety recommendations and procedures. In case of a main parachute system malfunction or any other event that may compromise the safety of Yourself or others, follow standard safety procedures including, if necessary, standard reserve parachute activation procedures, and *do not follow any further instructions for this intervention study!*

1. Free fall terminal velocity reduction:

1.1 At approximately 1 500 m AMSL, while maintaining a stable body position with shoulders level to the horizon and unaltered heading, begin to slow down Your fall rate by progressively increasing Your body surface area to the relative wind, using any free fall technique for slowing down that You are comfortable with and judge to be safe. Try to slow down as much as safely possible without losing stability or adding any other forms of risk.

1.2 At no lower than 1 200 m AMSL, deploy Your main parachute in a stable body position as you normally do.

2. Head high pitched up overall body attitude:

2.1 After the free fall terminal velocity reduction, at main parachute deployment, while maintaining a stable body position with shoulders level to the horizon and unaltered heading, increase the pitch angle of Your long body axis attitude. This means raising Your head, shoulders, and upper body up from the flat belly-to-relative-wind plane to a head-high body position.

2.2 This manoeuvre may be performed with any free fall technique that You are comfortable with and judge to be safe, as long as the sought head-high body position is achieved - *and as long as there is no risk for an unintentional backflip!* If You incorporate any degree of knee flexion in the manoeuvre, please take special care that you do not reach a complete vertical position or in any other way risk performing an unintentional backflip.

2.3 Maintain a head-high position of Your head relative to Your long body axis - *unless You need to bend Your head forward towards the chest or look down for safety reasons!*

2.4 For safety reasons, it is important that You maintain a stable body position and ensure that You will not do an unintentional backflip. Choose Yourself how much You would like to increase the pitch angle of Your long body axis attitude, in order to maintain Your safety. If You do not feel comfortable with any degree of increased pitch angle - *then remain in a flat belly-to-relative-wind plane at main parachute deployment!* "