

## Rhythem Transgender & Non-binary (TNB) Athletic Bodywear

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### Contextual Review and Concept Statement

According to the American Civil Liberties Union, over half the states in the U.S. are working towards passing anti-trans bills that discriminate individuals looking for healthcare or from participating in organized school sports (ACLU, 2021). Participation in sport can provide a platform for self-expression for Trans and Non-Binary (TNB) athletes, and can help mitigate effects of depression (Peirce, 2018). Participation is also precluded by a lack of adequate performance apparel that take TNB athletes needs' into consideration. For example, TNB athletes will utilize binding apparel to present a flat chest appearance (Bell, 2020). Currently, there are no binders on the U.S. market that are safe and functional for TNB athletes to use for prolonged athletic activity. Not only can binders be uncomfortable, but they can also restrict breathing, impede posture, and lead to long term complications, such as muscle atrophy (Bell, 2020). Rhythem Bodywear is a compression garment that provides TNB athletes comfort, support and shoulder mobility while also alleviating feelings of gender dysphoria.

### Aesthetic Properties and Visual Impact

Based on TNB athlete interviews, Rhythem was designed to be low profile so a spectator could not see the user wearing the garment, which was an issue discovered with current binders. Seams were joined using a flat seamer, and the neckline, armhole and hem edges were laser cut to reduce bulk and maintain a minimal appearance. No adjustable hardware was used to also reduce bulk and to make sure the garment did not aesthetically appear to be a women's sports bra. The colors selected were chosen for two different scenarios and could be applied through sublimation printing. The first was defined for athletes that did not want to call attention to wearing a binder. In that case, the color palette reflected a range of nude skin tone options help the binder blend in with their complexion. The second scenario was defined for when the user was looking to celebrate their gender identity in a pride format. This allows for a more energetic color palette that includes trans pride colors like blue, pink, and purple as well as non-binary colors of black and yellow (Alatalo, 2020).

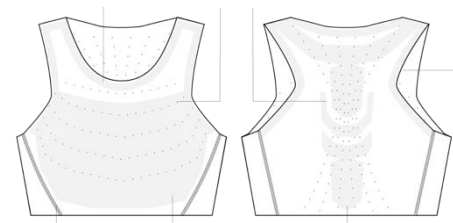


Figure 1. Rhythem Sport Top

### Process, Technique, and Execution

The project used a five-part design process to develop a new binder for the TNB athlete. The process began by collecting research on the specific psychological (e.g., dysphoria, aesthetics), physiological (e.g., sweat zones, stress) and biomechanical (e.g., breast and shoulder motion) needs of TNB athletes. Secondly, the researcher connected with athletes (n=14) that identified as TNB to gain insights around their experiences with current non-sport binders. A popular non-sport binder (gc2b Half Tank, \$33) was then wear tested to see how it performed on different TNB athletes (n=3), and qualitative data was collected regarding fit and comfort perceptions. Findings were translated into 2D ideations, and 3D prototypes were created, and wear tested with a TNB athlete to gain feedback. Twelve initial prototypes were built from 84% polyester and 16% spandex warp knit materials with different polyurethane heat transfer film overlays to mock-up compression zones along the chest wall. In testing these prototypes, user feedback was collected that indicated which zoned compression patterns provided the best effect for a flat chest appearance while allowing for support, breathability, and shoulder mobility. Final prototypes were created utilizing a heat-pressed bonding technique that allowed the poly/spandex material to be zoned for compression and support. Patterns were laser cut and bonded to create clean finished neckline, arm hole and hem edges that rest comfortably against the skin. Ventilation holes were also laser cut into the bonded pattern pieces, in areas of high sweat. Garments were assembled using a flat seam construction.

#### Significance, Rationale, and Contribution

The goal of Rhythem was to provide TNB athletes with garments that alleviate feelings of dysphoria and increased their ability to breathe and move. The compression bodywear can be worn under any other garment to practices or performances. Rhythem sets itself apart from other binders for the TNB community by introducing a unique laminate construction technique that allows for free cut edges and zoned compression to their athletic needs and body shape.

#### Originality and Innovation

Through wear testing on four different athletes, Rhythem was successful by allowing TNB athletes to perform comfortably without restricted breathing or affecting posture. It helped to provide a flat chest appearance that reduced feelings of dysphoria and was easy to don and doff. When worn under another shirt it does not cling during activity which could expose its existence. Zoned areas of non-stretch, located around the breast volume and across areas of the back, provided chest compression and support. For different cup sizes, graded zones of non-stretch panels were developed to provide size appropriate fit and function. Materials are lightweight, moisture wicking and breathable - which enable thermal comfort and confidence.

In the future, other garments will be designed as a part of the Rhythem Collection that will utilize the same construction techniques developed to provide options that can be worn as standalone pieces that do not need layering to camouflage the next to skin compression garment.

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