

No city is built overnight. Cities evolve through a combination of careful planning, trial and error, hard work and serendipity. Unforeseen events and accidents of history often shape and determine a city's character and identity.

PlyoCity—though not on any map—was formed this way. Key events, diligent effort, an assortment of ideas and a little luck helped produce this one-of-kind metropolis. With lessons learned and experience accumulated over 30 years, Mike Rangel, PlyoCity's founder and director, created a training complex that has improved the performance of more than 30,000 high school athletes, along with the world's best professional beach volleyball players. The achievements of these athletes are as notable as the background and circumstances that shaped Mike's city.

A photograph of four white Wilson AVP beach volleyballs with yellow stripes, resting on a sandy beach. The balls are arranged in a cluster, with one in the foreground and three behind it. The Wilson logo and 'AVP' are visible on the balls. The background is a soft-focus view of the beach and ocean.

evolution

PART 1: WEIRD STUFF

PlyoCity originated in the late 1970s, when Mike was a member of Athletes in Action, a collegiate all-star volleyball team that played against international competition. Meeting, playing and training with elite athletes from around the globe exposed Mike to plyometric training; and he used its techniques and drills to construct a workout that allowed him to increase his vertical leap by 6 inches in just six months, topping out at 42 inches. Mike's early experiments and workouts formed the foundation for PlyoCity's first training program.

Following his playing career, Mike coached volleyball and basketball at Edison High School in southern California. He used plyos to train his athletes while continuing to adjust the program. His 25-minute workout-in-progress produced dramatic improvements in his players—along with strange looks from witnesses. Many thought Mike's unconventional training program was weird, but no one could refute the results: each athlete increased his vertical by an unbelievable 4 to 6 inches. Mike now understood how well the training could work for anyone.

PART 2: I WANNA BE A BALLER

In 2000, nearly 10 years after Mike ended his coaching career, his son Steffen came to him and said, "I want to be a volleyball player." Dipping into his memory bank, Mike took the same plyometric movements that had advanced his own skills, and those of his high school athletes, and began training Steffen. What started as simple, twice-a-week father-son workouts on a grass field near their house quickly turned into a gathering of local, young, aspiring athletes. The number of participants grew rapidly, becoming the first settlers of Mike's training community. With almost 40 athletes under his tutelage,



Mike started charging about \$100 a month per person. No one refused to pay. PlyoCity was born.

Over the next two years, Mike expanded his training territory, and the population of his city grew to more than 200 athletes. Athletes who could afford it paid between \$89 and \$100 a month; those who couldn't pay trained for free. Mike

understood that his mission was to serve the needs of young athletes.

Never satisfied, Mike continued tinkering with his program for the next three to four years. What had become an elaborate hour-and-a-half training session with lots of down time got trimmed to a 50-minute work-a-thon with little rest. PlyoCity athletes still perform this program today.

PART 3: SHOWING OFF

About two years into its existence, something great happened at PlyoCity: female inhabitants entered the population. Because Mike operates a group system, the infusion of girls motivated the guys to train even harder. Workouts became more intense and competitive, athletes pushed themselves harder and results continued to soar.

PART 4: THE MOBILE CITY

One coach had several athletes training at PlyoCity, all of whom made significant progress. Amazed and enthused, the coach wanted his whole team to train with Mike, but only if Mike could come to his school instead of the coach having to bus his athletes to PlyoCity.

This was the catalyst that made PlyoCity mobile. Mike put his movements and workouts on paper, loaded some equipment in his van and hit the road. Before he knew it, he was training volleyball, baseball, basketball, soccer, lacrosse, tennis and football teams at

high schools throughout southern California. The middle stage of the evolution had matured as the PlyoCity Mobile Workout.

Needing nothing more than cones, ropes, dot mats and either half a basketball court or an outdoor grass field, Mike could train as many as 100 athletes at a time. Sessions lasted less than an hour, but the coaches were thrilled. Their athletes got noticeably quicker, faster, stronger and more explosive. Also, the price was right. Mike charged only \$40 to \$60 per month per athlete, less than the going rate for a personal trainer.

Mike quickly expanded across the country. PlyoCity now operates in eight states, with a successful business model to match its proven training formula.

PART 5: GOOD WILL

Three and a half years ago, Mike attended a charity fund-raiser for Tom Ashen, a successful former U.S. volleyball player, prominent in the community, who was battling cancer. Tom and his athletes had experienced Mike's mobile training program and thought the world of it. Tom suggested that Mike show his workout to Karch Kiraly, whom he had met at the fund-raiser. Karch agreed to check it out.

A month and a half later, Karch visited Mike while he was training a high school volleyball team. The workout was nothing like Karch expected and everything he was looking for. The beach volleyball king began training with Mike in January 2003, becoming the first member of the PlyoCity royal family.

PART 6: THE ROYAL FAMILY

Although the PlyoCity Mobile Workout was well established, Mike knew he would have to change it to accommodate the needs and adjust to the fitness and talent level of a professional beach volleyball player. Mike watched Karch practice, analyzed his movements and developed a program to improve his quickness, agility and conditioning on the beach. Over the next



of a City

BY: CHAD ZIMMERMAN

four months, the program evolved into the workout that Karch currently performs with Mike twice a week throughout the year.

After one year of PlyoCity training, Karch had his most successful season in eight years. The only difference in his regimen had been to add Mike's program. Word about Karch's improvement traveled fast. The next royal to call was Misty May-Treanor. When she attained great results, her partner Kerri Walsh signed on. Then, a year later, Karch teamed up with Mike Lambert, who also wanted in. These four became Mike's exclusive professional clients—the complete PlyoCity royal family.

Mike continues to receive calls from other pro volleyball players, but he won't train them. His top priority and main business remain training high school athletes.

PART 7: THE PROGRAMS

Two distinct training programs have emerged from PlyoCity's evolution—the Mobile Workout, a 50-minute indoor or grass session for high school and college athletes, and the Professional Beach Workout, a 50-minute sand program for elite players. Both are based on plyometric principles and include jumps, hops, skips and other explosive movements that develop first-, second- and third-step quickness, vertical leap, agility and explosiveness. The Mobile Workout uses only body weight as resistance. To increase the professional program's degree of difficulty, Mike adds medicine balls. Both programs employ short rest times to mimic the nature of a volleyball game. With no more than 20-second breaks in the Mobile Workout and 10 seconds in the Professional Beach Workout, the programs are more intense and difficult than any game.



PLYOCITY WORKOUTS

THE PLYOCITY MOBILE WORKOUT—designed specifically for high school athletes—consists of nine elements to improve all areas of athletic skill. Coach Rangel provided exercises from each element, all of which should be performed on grass or an indoor court.

THE PROFESSIONAL BEACH WORKOUT—comprises the same nine elements; however, the exercises are tailored to the skill level of a professional athlete and performed in the sand. Rangel supplied a beach exercise for seven of the elements.

1. STRETCH

RANGEL'S COMMENTS:

We do static, ballistic and a new type of multifunctional stretching to warm up the muscles and to prevent injuries. If you are injured, you come back more quickly when you're in better shape and condition.

PLYOCITY MOBILE WORKOUT

Flippers-up, Squat, Hangovers

- **Flippers-up:** Bend knees, touch hands to ground, flex feet up.
- **Squat:** Squat with feet flat on the ground; make sure heels don't lift.
- **Hangovers:** Stand with feet together, bend at waist and hang arms to ground as far as you can.

Groin Stretch Right/Left, Straighten to Hip Flexor

- **Groin Stretch:** Step laterally into side lunge, both feet facing forward, back leg straight, weight on front foot.
- **Hip Flexor:** From groin stretch, turn 90 degrees toward bent knee, keep back leg straight, lean back.

PROFESSIONAL BEACH WORKOUT

- **Independent Stretching.** Before warm-up, each athlete stretches individually for 10-25 minutes.

2. LEG EXERCISES

RANGEL'S COMMENTS:

What I have found with these particular leg exercises is that they involve the whole lower body, stomach and hip flexors. They are plyometric and isometric movements, so the whole body has to be in control while doing the movements.

As for the pros, it's a core strength movement for them on the beach. Because they're doing the Single-Leg Pick-up with a medicine ball, they have to do it really slow and controlled. Above everything else, it builds body balance, which allows athletes to run, jump, hop and skip without hitting the net or going out of bounds. It builds body control.

PLYOCITY MOBILE WORKOUT

- **Day at the Beach:** Lie on right side, lean on right elbow, bend left leg and put left foot flat on ground, and lift right leg. Don't touch floor with right leg until all reps are complete. Repeat for left leg.

INDEPENDENT STRETCHING



SINGLE-LEG PICK-UPS



- **Single-Leg Pick-ups:** Stand on one leg, slowly reach down bending at knees and waist simultaneously, pretend to grab a ball off the ground, move slowly back to upright position.

PROFESSIONAL BEACH WORKOUT

- **Single-Leg Pick-ups with med ball (in sand):** With medicine ball in hand, stand on one leg, slowly reach down bending at knees and waist simultaneously, touch the medicine ball to the ground, move slowly back to upright position. 10x each leg

3. WARM-UP

RANGEL'S COMMENTS:

Skip A is done as a light, low-level plyometric to prepare the quads, calves and ankles for more intense jumping. Skip B is more for flexibility and getting the hamstrings warmed up. By kicking the opposite leg to hand, I find it works the hamstring. You want to get the entire lower body ready to roll before plyos.

PLYOCITY MOBILE WORKOUT

- **Skip A:** Skip with high knee action, drive knees above waist.
- **Skip B:** Skip with straight leg action, touch toe to opposite hand.

4. JUMPS

RANGEL'S COMMENTS:

The jumps work on vertical leap. You become a higher jumper from jumping a lot and from these jumps. Russian Skips—it's a movement that puts more energy on one leg, so it forces you to use body balance and coordination, but it puts a load on the one leg you're jumping off—like hop scotch. With Skip Hops, we are loading and exploding, and the key to the whole drill is the load—not the jump. It's loading the calves, jumping up and then down before you explode—that's the plyometric, which is the original methodology from the Russians. It's not the jump—don't get me wrong, that's also a plyometric—but the true plyometric is the load, and jumping up as soon as you touch the ground.

The Russian Freeze is tremendous when done in conjunction with squats. The athlete swings his arms, jumps out and freezes. It's a powerful plyometric with some isometric tied in, because you're freezing and holding for a two-count.

PLYOCITY MOBILE WORKOUT

- **Russian Skips:** Start on stomach or back, explode up, sprint two steps, quickly hop forward four times on one leg. Repeat on opposite leg.
- **Skip Hops:** Skip, drive knee up and then kick that foot back in mid-air.

PROFESSIONAL BEACH WORKOUT

- **Russian Freezes:** Jump out as high and far as possible, land in squat position, hold two seconds. Perform 4 sets of 10 freezes with 10 seconds between sets.

5. GROUP DRILLS

RANGEL'S COMMENTS:

Ankle Hops are tremendous work for the stomach because you're pushing your feet in front of you. And to me, the stomach muscles are the most overlooked when trying to become quicker, stronger, faster and more explosive. All great athletes and great jumpers have strong core strength and muscles in the stomach, which ties your whole torso in with the lower body. So Ankle Hops work not only on jumps, but on the stomach.

PLYOCITY MOBILE WORKOUT

- **Ankle Hops:** Start on ground on back, quickly roll over and stand up, jump as high as possible, kick legs straight out, bend at waist, touch hands to toes.

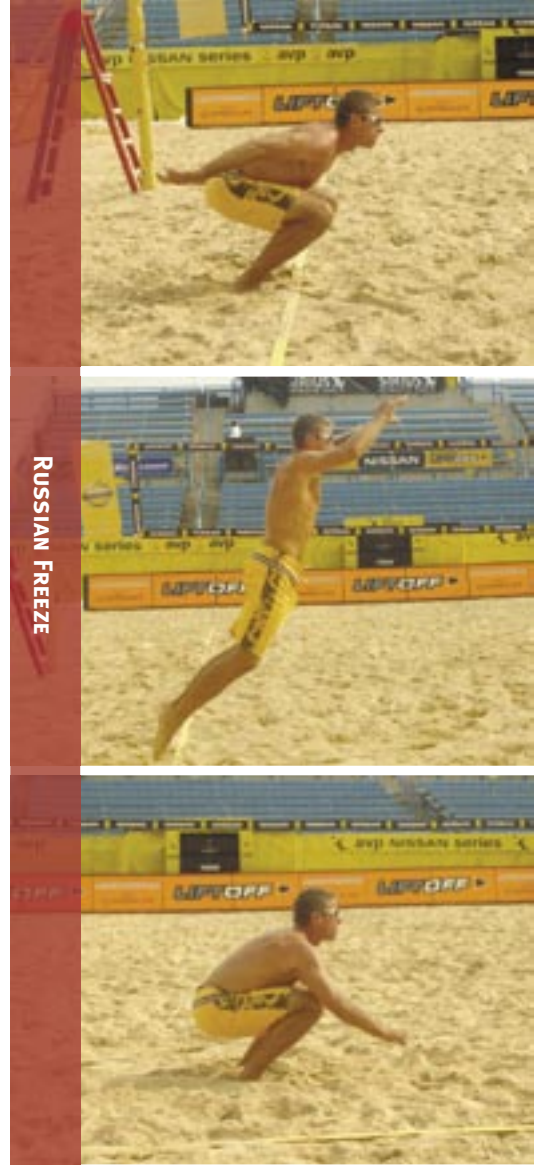
6. SHUTTLE DRILLS

RANGEL'S COMMENTS:

Shuttle drills in general are all about foot speed and quickness. These two drills—the Two-Legged Hop and Zigzags—are exactly about foot speed and quickness. But you still have to use your body balance. You've got to be coordinated or you'll jump too far and hit the cones. So, all these elements make you a better athlete.

With the Face Left Zigzag, you go up one way, go in and out of cones, then turn and sprint. Coming back, you sprint first and then go through the cones. They are two totally different movements. One puts you in kind of an obstacle course and then you move to fifth gear. With the other one, you have to be in fifth gear and then downshift to go through the cones. You're using two different types of explosiveness and coordination. It makes you think in two different realms.

Our beach Drop-Off Drill is where each pro athlete holds a med ball. And when they do the movement in the sand with a 15-, 18-, 20-pound med ball, it's really tough. The



ONIONS HAVE LAYERS

MIKE RANGEL ON THE BEAUTY OF HIS WORKOUT

"I believe this plyometric workout is like an onion, because it's got a layering effect. When an athlete comes to train with me, I don't know what he or she needs to get quicker. But I do know that I have 30 movements, and that the right combination will make the athlete quicker. Maybe he or she doesn't need the Right Foot, Left Foot Touches or the Ankle Hops, but instead needs the Russian Freeze. That's the beauty of my system. I hit on just enough movements to get significant results, and we cover the correct forward and sideways movements to get the results we want."



DROP-OFF DRILL



RIGHT/LEFT BACK AND FORTH

reason we do this drill is to build foot speed and quickness, but also body balance. This is so when they stop to dig a ball, it's a controlled movement. There's a lot of conditioning involved with this one.

PLYOCITY MOBILE WORKOUT

- **Two-Legged Hops (heels to butt):** Set up four cones one to three feet apart, place fifth cone 10 feet from fourth cone. Jump for height over first four cones, kick heels to butt, sprint to fifth cone. Next, start at fifth cone, sprint to fourth cone, jump for height over fourth through first cones. Kick heels to butt on each jump.
- **Face Left/Right Zigzag:** Move laterally through cones, weave in and out of cones using quick front to back chopping steps; turn and sprint forward after fourth cone. Next, start at fifth cone, sprint to fourth cone, move laterally through cones, weave in and out of cones using quick front to back chopping steps.

PROFESSIONAL BEACH WORKOUT

- **Drop-Off Drill:** Stand at the net, hold medicine ball at stomach, turn and sprint three to four feet from net, hold for one second, race back to the net, touch the net, hold position for one second. Perform 5-8 reps on each side with 10-second rest between sets.

7. CONE HOPS

RANGEL'S COMMENTS:

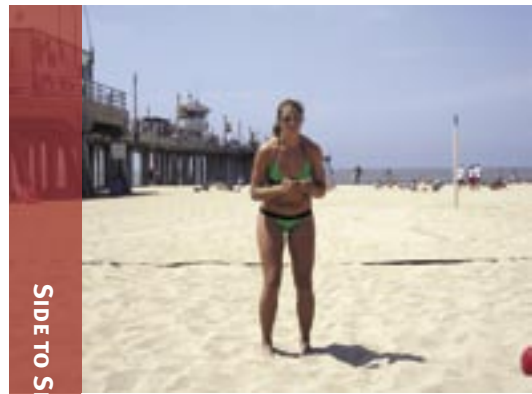
The Side to Side with Load has tremendous results because of the plyo that kicks in. When you jump up 6 to 8 inches, come down, then jump over to the other side of the cone, that's the true plyo, because you're using body weight and gravity when you jump, then coming down and exploding over to the other side. It's tough.

PLYOCITY MOBILE WORKOUT

- **Side to Side with Load:** Stand to side of cone, jump in place six to eight inches (load), land and jump for height over cone. Repeat to opposite side.
- **Front to Back without Load:** Stand behind cone, jump over cone front to back as fast as possible.

PROFESSIONAL BEACH WORKOUT

- **Side to Side Load/No Load:** Jump side-to-side over a cone, loading before each jump. Perform 6 reps. Take 10-second break, then do 12 side-to-side jumps without a load.



SIDE TO SIDE HOPS

8. ROPE DRILLS

RANGEL'S COMMENTS:

The great thing about rope drills is that you can use a line on a football field or a rope, which you probably have at home or in your back yard. You can even put two cones on the carpet in your home, visualize the line and use that. Foot speed and conditioning result from rope drills.

It looks easy, but it's not as easy as it seems. What you're working with the Two-Leg Skier is obviously the calves and ankles, because they're moving side to side—like you're skiing. And Fast Feet Forward—pure foot speed. Really, there is no pattern to it, because everyone is different. You're just trying to touch both sides of the line as fast as you can. I want you to get to the point where you're not thinking about the two touches—you're just doing it.

The key to the beach drill is that your legs move up and down like pistons of a car. But they move up and down while simultaneously moving sideways. It's great for foot speed and quickness, but it's also a great conditioning movement. It wears you out if you do it for 20 seconds.

What I have found with these particular leg exercises is that they involve the whole lower body, stomach and hip flexors. They are plyometric and isometric movements, so the whole body has to be in control while doing the movements.

PLYOCITY MOBILE WORKOUT

- **Two-Leg Skier:** Hop left to right over rope, jump slightly forward on each jump; move up the length of rope.
- **Fast Feet Forward:** Go forward along rope, move feet as fast as possible left and right over the rope. Touch both feet on each side of rope.

PROFESSIONAL BEACH WORKOUT:

- **Fast Feet to the Side:** Move laterally up rope, move feet front to back, touch both feet over rope, then back.

9. MAT DRILLS

RANGEL'S COMMENTS:

I see results in athletes from this more than anything else we do. This is at the very, very core of what PlyoCity is; it's where the rubber meets the road in my company. The first one—Right Foot, Left Foot Back and Forth—builds foot speed, quickness and explosiveness in the foot that touches the ground, and it's great for conditioning. Front Triangle builds the same foot speed quickness and explosiveness, but for both feet. And it develops body balance because you have to stay centered over that one dot or else you fly all over the place. The Skier, Side to Side, builds foot speed, quickness and explosiveness



SKIER



while working the calves, ankles and outside parts of the ankles.

These movements also prevent injuries, which is a major, major thing. I've trained close to 20 orthopedic surgeons' sons or daughters. Every one of them has said these drills help prevent ACL and MCL injuries. Doctors love these movements, because they build strength in the knees and the joints. That's not even why I designed them. I'd love to say I designed them to prevent injuries, but when doctors ask me why I started doing these, I have to say, "for foot speed and quickness." And they say, "Do you realize these prevent ACL, MCL and other knee injuries?" Powerful stuff.

The results you are going to see with these foot touches will be more drastic on grass or hard surfaces. On sand, although there are results, they're more for conditioning and injury prevention.

PLYOCITY MOBILE WORKOUT & PROFESSIONAL BEACH WORKOUT

The times are based on Professional Beach Workout.

- **Right/Left Back and Forth:** Stand on one leg, kick opposite leg forward and back like pendulum. As opposite leg swings back and forth, other foot hops back and forth. Repeat for opposite leg. Perform for 20 seconds for each leg. Take a 10-second break
- **Front Triangle :** Feet together on center dot, hop back and left, hop back to center, hop back and right, back to center, repeat. Perform for 40 seconds with a 10-second break.
- **Skier :** Feet together, hop back and forth over center dot as fast as possible. Perform for 20 seconds. ⌚

PLYOCITY MOBILE WORKOUT										
LEVEL*	1	2	3	4	5	6	7	8	9	10
1. STRETCH										
Flippers-up, Squat, Hangovers	STRETCH FOR 10 MINUTES									
Groin Stretch (R,L) - Straighten to Hip Flexor										
2. LEG EXERCISES	REPS									
Day at the Beach (R,L)	8	10	12	14	16	18	20	22	24	26
Single-Leg Pick-ups (R,L)	4	6	8	9	10	11	12	13	14	15
3. WARM-UP										
Skip A	PERFORM DOWN AND BACK									
Skip B										
4. JUMPS	REPS									
Russian Skips	4	4	5	5	6	6	7	7	8	8
Skip Hops	4	4	5	5	6	6	7	8	9	10
5. GROUP DRILLS	REPS									
Ankle Hops	4	6	8	9	10	11	12	13	14	15
6. SHUTTLE DRILLS										
Two-Leg Hops (heels to butt)	PERFORM DOWN AND BACK									
Face Left/Right Zigzag										
7. CONE HOPS	REPS									
Side to Side (with load)	4	5	6	7	8	9	10	11	12	13
Front to Back (no load)	8	10	12	14	16	18	20	22	24	26
8. ROPE DRILLS										
Two-Leg Skier	PERFORM DOWN AND BACK									
Fast Feet Forward										
9. MAT DRILLS	SECONDS									
Right/Left Back and Forth	25	30	35	40	45	50	55	60	65	70
Front Triangle	50	60	70	80	90	100	110	120	130	140
Skier	8	10	12	14	16	18	20	22	24	26

*Move up one level every fifth workout