Since 2012, the Philadelphia Healthy Chinese Take-Out Initiative has been working with over 200 local restaurant owners and chefs to reduce the sodium content in their meals. This effort is a partnership between Temple University’s Center for Asian Health, the Asian Community Health Coalition (ACHC), the Greater Philadelphia Chinese Restaurant Association (GPCRA), and the Philadelphia Department of Public Health. This brief presents evaluation data related to the implementation of the Healthy Chinese Take-Out Initiative.

Key components of the intervention included: 1) a formative assessment of owner/chef knowledge, attitudes, and behaviors related to salt use and consumption, 2) professionally-led low sodium cooking trainings, 3) distribution of low sodium cooking materials including low sodium recipes, toolkits, and measuring spoons, and 4) on-site compliance checks and booster trainings. Program staff also conducted customer taste tests, and the sodium content of meals was assessed at baseline and at 6, 16, and 24 months post training.

Recruitment
- To be included in the initiative restaurants had to have Chinese owners or chefs, be take-out only, and located in high-poverty zip codes with large African American or Hispanic populations.
- Recruitment was facilitated by the ACHC and the GPCRA. Of 437 take-out Chinese restaurants in Philadelphia, 300 were recruited to participate in the initiative.
- 221 restaurants completed the formative evaluation and, ultimately, 206 participated in the cooking trainings. At two years post-intervention implementation, 185 restaurants remain enrolled.

Formative Evaluation* (n=221 chefs/owners)
- Most owners/chefs understood the link between excess sodium consumption and high blood pressure (70%) but had less knowledge of the effects on stroke (57%) and heart disease (54%).
- Most were willing and able to reduce the sodium content of their meals but desired training in food preparation (57%), procurement (79%), and marketing (84%) of lower sodium options.
- The potential for salt reduction was high as most owners/chefs prepared their own sauces; already used fresh vegetables frequently; and made healthier meals at home for their families.
- Customer demand and maintaining revenue were the key concerns with regards to engaging in further sodium reduction.
- Chicken Lo Mein and Shrimp & Broccoli were identified as two of the most popular menu items.

Adoption of Sodium Reduction Strategies (n=196 chefs/owners)
Sodium reduction strategies were assessed 8-22 months after the launch of the initiative.
Adoption of Sodium Reduction Strategies (continued)

Customer Taste Tests (n=9 restaurants, 324 customers)

Acknowledging the concern that low sodium changes might impact customer purchases, program staff conducted taste tests with customers in a subset of restaurants. Owners/chefs prepared three dishes using core low sodium strategies: use of less sauce, non-salt flavorings, and lower sodium ingredients.

<table>
<thead>
<tr>
<th></th>
<th>Overall Taste (out of 5)</th>
<th>Salty Flavor is Just Right</th>
<th>Would Purchase this Dish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicken Lo Mein</td>
<td>4.36</td>
<td>77%</td>
<td>91%</td>
</tr>
<tr>
<td>Shrimp &amp; Broccoli</td>
<td>4.73</td>
<td>83%</td>
<td>94%</td>
</tr>
<tr>
<td>General Tso’s Chicken</td>
<td>4.5</td>
<td>41%*</td>
<td>97%</td>
</tr>
</tbody>
</table>

*Note. *Anecdotal evidence suggested that customers were confused by this question because the perception is that General Tso’s Chicken should not have a salty flavor.
Outcomes Evaluation – Changes in sodium content (n=19 restaurants)

- Dish samples were collected from 19 restaurants that participated in the first cooking training.
- The sodium content of Chicken Lo Mein and Shrimp & Broccoli was assessed at baseline (2 months pre-training) and at 6 and 24 months following the low sodium cooking training. These two dishes were featured in the trainings. An additional dish—General Tso’s Chicken—was assessed at 6, 16, and 24 months. Low-sodium recipes for all three dishes were distributed with other low-sodium cooking materials throughout the intervention.
- Dishes were purchased by a “simulated customer”, so owners/chefs were blinded to the collection of dishes from their restaurants.
- Over 24 months, significant reductions in sodium content were seen, ranging from 13% to 34%.
- For the dishes Chicken Lo Mein and General Tso’s Chicken, reductions were largest during the first 6 months after the low sodium cooking training and were improved upon over an additional 18 months.
- For all three dishes, total sodium content at 24 months was below daily dietary sodium guidelines but still exceeded the guidelines for a single meal.

![Graph showing sodium content reduction](image)

**Sodium Content of 3 Popular Chinese Take-Out Dishes**

<table>
<thead>
<tr>
<th>Dish</th>
<th>Weight (g)</th>
<th>Sodium per Dish (mg)</th>
<th>Daily Sodium Guidelines</th>
<th>Lunch or Dinner Sodium Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Tso’s Chicken</td>
<td>358</td>
<td>1,673</td>
<td>&lt; 2,300mg</td>
<td>&lt; 805mg</td>
</tr>
<tr>
<td>Chicken Lo Mein</td>
<td>545</td>
<td>2,294</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shrimp &amp; Broccoli</td>
<td>352</td>
<td>1,372</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes. **p<0.01.

**Average Weight and Sodium per Dish at 24 Months Post-Training Compared to Dietary Guidelines**

Notes. “Dish” corresponds to the total amount per order provided to the customer. <1,500 mg/day of sodium is recommended if you are 51 or older, African American, or have hypertension, diabetes, or chronic kidney disease. Source: Dietary Guidelines for Americans, 2010.